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ABSTRACT

The purpose of this conference was to prepare key people in the field of education to function as inservice education leaders in their respective settings. The design called for participants to learn what the MOREL inservice education program is and what it hopes to accomplish, to identify the role and functions of the inservice education leader, to acquire the skills and techniques necessary to implement the program, and to develop the self-confidence needed to implement its strategy. The first part of the document contains summaries of all the conference sessions. The second part of the document contains the conference materials including a bibliography on leader training and teaching skills; a discussion of teacher behavior and student learning; an outline of the MOREL strategy for analysis and improvement of teaching behavior; detailed definitions of the functions of the inservice leader as analyst/counselor, teacher, mediator, and program administrator; Flanders' interaction analysis categories with ground rules for coding, coding forms, and objectivity check; an explanation of microteaching training; behavioral objectives and how to write them; samples of student feedback instruments; the technical skills of teaching and related class reaction forms. Related documents are ED 035 095 and SP 004 950. (MBM)

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Report of the Second

LEADER TRAINING CONFERENCE

February 3-19, 1969

MOREL

MICHIGAN-OHIO REGIONAL
EDUCATIONAL LABORATORY
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PREFACE

The Teaching Behavior Improvement Program is a strategy for helping teachers analyze their own teaching action and practice improved skills to strengthen their classroom performance. This program has been designed and revised by the staff of the Michigan-Ohio Regional Educational Laboratory over the past two years The effectiveness of the present version of the program is such that we at MOREL are now training principals, supervisors and other educational leaders to carry out the Teaching Behavior Improvement Program at their own school districts.

This report documents the second workshop conducted by MOREL staff to train leaders in the MOREL strategy. The MOREL leader training procedures will be improved based on evaluations made of this workshop, just as it is the result of redesign following the first workshop. Samuel Flam, inservice education specialist for the Laboratory, was the director of this workshop. William Farlow, Richard Merrick and David Sandler, also MOREL inservice specialists, were the seminar group leaders for the workshop. Other MOREL staff performed specialized functions when needed.

We wish to extend special appreciation to Sister Martinez and the staff at Madonna College at Livonia, Michigan for the use of their facilities. We are also appreciative of Mr. George Monroe, principal, Beaubien Junior High School, Detroit; Mr. Jack Buller, principal, Nankin Mills Junior High School; and Mr. Bruce Hudson, principal. Whittier Junior High School, Livonia; and their staff and students for their cooperation in the conduct of the micro-teaching experiences for the leaders-in-training.

Stuart C. Rankin
Executive Director

FOREWORD

The attached report of the second MOREL Leader Training Conference is divided into two sections:

> The first section includes the conference objectives, a list of conference participants, and a description in anecdotal style of the conference proceedings.
> The second section includes most of the materials and supporting documents used in the training of the seventeen attending leaders.

This report has limited distribution to the following individuals and agencies:

1. MOREL Board of Directors
2. Staff members, Department of Educational Laboratories, U. S. Office of Education
3. Workshop participants
4. Superintendents of participating districts
5. MOREL staff

CONFERENCE OBJECTIVES

The second MOREL In-service Education Leader Training Conference was held in Livonia, Michigan, February 3-19, 1969, at Madonna College. The purpose of the conference was to prepare key people in the field of education to function as in-service education leaders in their respective settings.

MOREL's Teaching Behavior Improvement Program is focused primarily on developing a strategy helpful in improving the day-to-day classroom behavior of teachers. The strategy is composed of elements or techniques that help teachers analyze their teaching behavior and, when indicated, change toward improving their teaching effectiveness and improving students' learning.

The conference design called for the participants to:

1. learn what the MOREL In-service Education Program is and what it hopes to accomplish,
2. identify the role and functions of the in-service education leader,
3. acquire the skills and techniques necessary to implement the In-service Education Program, and
4. develop the self confidence needed to implement the In-service Strategy.

MOREL LEADER TRAINING CONFERENCE

February 3-19, 1969

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CONFERENCE LOG

MONDAY, FEBRUARY 3	8:45 a.m.	Welcome and Getting Acquainted
	9:15 a.m.	Overview of In-Service Program
	9:35 a.m.	Questions and Answers
	9:45 a.m.	Teaching Behavior and Student Learning
	10:15 a.m.	Discussion
	10:30 a.m.	Seminar Group Assignments
	10:45 a.m.	Seminar Sessions (Possible application of MOREL program in districts represented)
	12:30 p.m.	Teacher Behavior Analysis from Video Tape
	1:45 p.m.	MOREL Analysis and Improvement Strategy
	3:00 p.m.	MOREL Organization for Change (Role of Inservice Leader)
	4:00 p.m.	General Session (Overview of Workshop)
TUESDAY, FEBRUARY 4	8:30 a.m.	General Session
	8:45 a.m.	Development Process and Regional Laboratories
	9:15 a.m.	Introduction to Interaction Analysis
	9:30 a.m.	Interaction Analysis Categories
	10:00 a.m.	Interaction Analysis Small Group (Practice Coding)
	12:30 p.m.	Seminar Sessions
		Group A Micro-Teach
		Group B Matrix Construction and Matrix Interpretation
		Group C Matrix Construction and Matrix Interpretation

WEDNESDAY, FEBRUARY 5	8:30 a.m.	General Session
	8:45 a.m.	Construction, Value, and Rationale of Behavioral Objectives
	11:15 a.m.	Coding
	12:30 p.m.	Seminar Sessions
		Group A IA Coding Student Feedback
		Group B Micro-Teach
		Group C IA Coding Student Feedback
THURSDAY, FEBRUARY 6	8:30 a.m.	IA Coding from Video Tape
	9:30 a.m.	Introduction to Technical Skills of Teaching
	11:15 a.m.	Seminar Session
		Group A & C Discussion of Technical Skills
		Group B Discussion of How to Institute Program
	12:30 p.m.	Seminar Sessions
		Group A Behavioral Objectives IA Matrix Interpretation IA Matrix Construction
		Group B Matrix Interpretation Student Feedback
		Group C Micro-Teaching
MONDAY, FEBRUARY 10	8:30 a.m.	Data Gathering in Schools
	1:30 p.m.	Preparation of Diagnostic Profile

TUESDAY, FEBRUARY 11	8:00 a.m.	Feedback to Teacher
	1:30 p.m.	Critique of Leader's Feedback
WEDNESDAY, FEBRUARY 12	8:30 a.m.	General Session
	8:45 a.m.	Practice Coding from Bell Tape
	9:15 a.m.	Seminar Session
		Group A Preparation for Micro-Teach Application of Micro-Teach Process
		Group B Interpretation of Classroom Interaction Sharing of Feedback Experiences
		Group C Coding from Bell Tape Interpretation of Bell Tape Codes
	12:30 p.m.	Seminar Sessions
		Group A Video-Tape Equipment Operation Micro-Teach
		Group B Subscripting Coding Mediator of Research Role
		Group C Bell Tape Coding Matrix Building Matrix Interpretation Behavioral Objectives
THURSDAY, FEBRUARY 13	8:30 a.m.	General Session
	8:45 a.m.	Coding for Record
	10:15 a.m.	Seminar Sessions
		Group A Group Critique of Micro-Teach
		Group B Preparation for Micro-Teaching
		Group C Code Subscripting Designing Learning Activities with Behavioral Objectives

THURSDAY, FEBRUARY 13	12:30 p.m.	Seminar Sessions
		Group A Critique of Micro-Teach Behavioral Objectives
		Group B Video-Tape Equipment Operation Micro-Teach
		Group C Mediator of Research Role
FRIDAY, FEBRUARY 14	8:30 a.m.	General Session
	8:45 a.m.	Test of Coding Objectivity
	10:30 a.m.	Seminar Sessions
		Group A Code Subscripting
		Group B Critique of Micro-Teaching Behavioral Objectives
		Group C Applications of Micro-Teaching Preparation for Micro-Teaching
	12:30 p.m.	Seminar Sessions
		Group A Mediator of Research Role
		Group B Behavioral Objectives Goal Setting
		Group C Video-Tape Equipment Operation Micro-Teach
SATURDAY, FEBRUARY 15	10:30 a.m.	Administrators' Luncheon
MONDAY, FEBRUARY 17	8:30 a.m.	Data Gathering in School
	3:00 p.m.	Feedback of Diagnostric Profile
	5:30 p.m.	Dinner at Hillside Inn
	7:30 p.m.	Group Critique of Feedback

TUESDAY, FEBRUARY 18	8:30 a.m.	General Session
	8:45 a.m.	Field Action Units
	10:00 a.m.	Preparation for Mini-Conference
	1:30 p.m.	Continue Preparation for Mini-Conference
	3:00 p.m.	Mini-Conference
WEDNESDAY, FEBRUARY 19	9:00 a.m.	Conference on Innovation & Change The Change Process: "What Is It?" by Dr. Frymier
		The Change Process: "How It Is Implemented" by Dr. Foster
	11:00 a.m.	Relevance to MOREL IN-Service Progrm
	1:30 p.m.	Evaluation of Workshop

Conference Sessions

MONDAY, FEBRUARY 3

GENERAL SESSION

Samuel Flam opened the Leader Training conference at Madonna College, Livonia, Michigan. He welcomed the participants, introduced training staff members and guests, and identified the major objectives called for in the conference design. The remainder of the session was devoted to the preparation of "resumes" as a technique for helping participants share personal backgrounds.

OVERVIEW OF TEACHING BEHAVIOR IMPROVEMENT PROGRAM

Lilburn Hoehn, Director of MOREL's Teacher Education Programs, gave an overview of the Laboratory's Teaching Behavior Improvement Program. He described the program as a sequence of activities; a process through which a teacher moves in order to effectively improve his behavior on a day to day basis.

Dr. Hoehn went on to tell the history of the development of MOREL's in-service program. The original design was field tested during the 1967-68 school year in Livonia, Pontiac, and Toledo. After these tests the program was revised and the new design was field tested in ten inner-city Detroit junior high schools in the summer of 1968. The program was further refined and final field tests are going on at the present time at Grandville Junior High, Grand Rapids, and Woodson Elementary in Inkster.

Dr. Hoehn explained the three stages of development in the MOREL planning for implementation of a teacher education package:

1. Teacher Training -- the work of the past sixteen months for developing an in-service education program that is a viable alternative to present efforts.

2. Leader Training -- the training of others to return to their schools and implement the in-service education program.

3. Installation -- getting both of the above components installed in institutions responsible for the education of teachers.

Emphasizing that the MOREL staff has been dedicated to developing programs which have as their thrust the self-renewing concept, Dr. Hoehn defined a self-renewing program and cited eight underlying assumptions of the in-service program:

1. Teachers need and want to become more effective.

2. The majority of teachers can be trained to direct their own improvement efforts.

3. Self-directed changes are more likely to persist than imposed changes.

4. Direct attention to the teaching act itself will have greater impact than attention to other factors such as development of content or curriculum materials.

5. A program developed with practicing teachers will have more potential than a pre-designed program.

6. An effective program is applicable in a variety of teaching situations.

7. A change in the pre-service education of teachers is more likely if an alternative is shown to be effective in an in-service education program.

8. An in-service program must be replicable.

SEMINAR GROUP ASSIGNMENTS

Sam Flam assigned each of the Leader Training conference participants to a seminar group. A training staff member was assigned to each group. The groups were:

GROUP A: Richard Merrick, Program Associate
Mary Durgan
Gerlad Ellis
David Rumminger
Jeanette Van Riper
Elizabeth Wilson

GROUP B: David Sandler, Program Associate
Arthur Frock
Muriel Greig
Don Griffin
James Hechlik
Shirley McNeil
Ed Taras

GROUP C: William Farlow, Program Associate
Bernyce Edwards
Bill Hetrick
Donald McMechan
Wesley Maas
Ronald Sartor
Robert Tyler

The role of the seminar group in the conference was explored as a technique for sharing the participant's knowledge and experience as it related to the MOREL program. Groups convened in separate rooms to begin the examination of the MOREL strategy and organization for change.

TEACHER BEHAVIOR AND STUDENT LEARNING

Delmo Della-Dora, Director of Planning & Development discussed the ways in which the MOREL program differs from the usual in-service teacher education and teacher supervision approaches. He examined what research says about the effects of commonly used in-service approaches:

(1) Little research exists on the effectiveness of in-service training. We rarely question if courses, workshops, consultants, study committees, or supervision and evaluation result in improved teaching.

(2) Innovations in education have not made a significant difference for a period of more than six months or so in improving the learning of students, except in the case of a few isolated programs.

The conclusion was reached that we are not as rational as we might be. We are spending time, money and effort on assumptions about in-service education that are untested and/or false.

Research on defining a "good" teacher reveals that there is no single set of qualities which describe the best kind of teacher. Good teaching depends upon patterns that exist and how teachers interact with specific students. A good teacher in one situation could be terrible in another.

A few examples of what research* has to say about the relationship of teacher behavior to student learning were examined:

A. Rosenthal, in Pygamalion in the Classroom, reveals that one of the most potent variables in learning is what the teacher expects of his students.

B. Flanders' research indicates that specified kinds of teacher interaction with students produce predictable kinds of student behavior which have significant impact on learning.

C. Torrance has identified certain kinds of teaching behaviors that stimulated creativity and others that have hindered creativity.

D. Anderson, Brewer and others discovered that neurotic teachers' behaviors showed up among their students, particularly in early elementary grades.

E. Hollingshead, in Elmtown's Youth, shows that teacher behavior is generally different with students of differing social class background and more recent studies indicate that teacher behavior relates to race of students--in ways which seriously affect learning.

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* See Appendix for bibliography

F. Ojemann and others have demonstrated that specified teacher behaviors can lead to a significant increase in pupil self-understanding and understanding of the causes of human behavior generally.

In summary, Dr. Della-Dora stated that changes in teacher behavior can create improvement in academic learning, self-concept, creativity and other areas of learning. The MOREL in-service program is designed to help teachers direct their own improvement, by helping the teacher focus on his behavior as he interacts with students.

In order for these improvements to take place:

1. The teacher must want to examine his own behaviors and their impact on student learning.

2. He must have the opportunity to carry out self-examination and obtain knowledge of techniques for doing so.

3. He will have to identify and/or clarify and specify what he wants to accomplish (goals) with students.

4. He needs time and knowledge of skills necessary for self-evaluation based on self-examination and identification of goals.

5. He needs time and assistance in developing new behaviors which will lead to improved attainment of goals and, from time to time, in developing new goals.

SEMINAR GROUP SESSSION

Each seminar group met in a separate conference room and discussed the opening presentations on the "In-service Program" and "Teacher Behavior and Student Learning." Questions were raised by the participants about the conference and about the MOREL in-service program. The participants then discussed how the MOREL program might be used in their district and schools.

Participants shared information with each other about their experiences, backgrounds and job descriptions. They expressed the feeling that the MOREL program could be instrumental in bringing about change in teaching behavior. Some concern was expressed about the problems of implementing the program.

SEMINAR GROUP SESSION

Following lunch conferees viewed a video-taped classroom session. Participants then shared observations on the teacher's behavior. The group leader asked the participants to analyze the teacher's behavior for the purpose of identifying:

a) behaviors which should be changed

b) methods they would use for objective analysis of teaching behavior

c) a process for helping teachers improve behavior

The analysis techniques used by participants were examined for objectivity and completeness. Improvement strategies suggested by participants were examined for potential effectiveness. The group leaders continued this discussion with a detailed examination of MOREL Strategy for Analaysis and Improvement of Teaching Behavior." The seminar group was asked to model the MOREL program by suggesting a strategy for analysis and improvement for teaching viewed on video tape. Various means for gathering data about the classroom were identified: tape recording, video tapes, trained observer, IA coding, student feedback, etc. The types of information that could be gathered using each of the listed feedback devices were identified. Participants then focused on techniques for practicing behavior change.

SEMINAR GROUP SESSION

This session was begun by discussing the role of the In-service Education Leader and the functions he performs. Participants were asked to read and analyze the MOREL publication, "In-service Education Leader--Analyst/Counselor + Teacher + Mediator of Research + Program Administrator." The tasks required to implement the Teaching Behavior Improvement Program were examined and discussed. It was emphasized the the tasks are not actually separate and an implementation of the in-service leader roles finds the functions overlapping.

The group discussed the Field Action Unit concept as an organizational pattern for implementing the inservice analysis and improvement model. Questions were raised about the openness of teachers which is required to implement the FAU concept. The group discussed the advisability of beginning the FAU with a small group of teachers (4-6) who are secure enough to examine their behavior. As more closed teachers see the FAU as a relatively safe encounter they would be willing to join. Although some group members saw their administrative role as being an additional block to gaining support for the FAU process, it was generally agreed that this problem could be overcome. Participants identified their concerns about skills which should be emphasized in the conference.

TUESDAY, FEBRUARY 4

GENERAL SESSION

The session was called to order following an opportunity for the participants to socialize over coffee. An overview of the day's activities was given. The speaker for the first session was introduced.

MOREL PROGRAMS AND THE DEVELOPMENT PROCESS

Stuart Rankin, Executive Director of MOREL, talked to the conferees about the development process and the teacher training program developed by MOREL. He examined the 1965 Elementary and Secondary Education Act, and each of its titles, calling the 20 regional laboratories the genius of the Act.

Dr. Rankin explored the relationship of the development function to the functions of knowledge production found at research centers, and the diffusion process exemplified by the work of State Departments of Education. The Educational development is that change function which produces tested alternatives in educational practice. As such, it is user-oriented rather than knowledge-oriented and requires the design-trial-evaluation-redesign cycle as an operational mode. The ultimate goal for the developer, is to be able to say "Invest X dollars in Y program and you will have Z results."

He emphasized that the MOREL teacher training program is the opposite of "teacher proof". It places confidence in the ability of the teacher to improve his or her own teaching behavior. It is based on the establishment of teaching goals and interpretation as to how well these goals are being achieved. He pointed out that the MOREL program provides the basic philosophical conditions that must underly and change endeavor. They are conflict, support, alternatives, freedom, feedback and purpose. The MOREL teacher training program includes all of these conditions and gives emphasis to feedback.

Following Dr. Rankin's remarks, John Gardner's Self Renewal: The Individual and the Innovative Society was distributed to each of the participants. It was emphasized that Self Renewal is the philosophical base for MOREL's self renewing concept.

INTRODUCTION TO INTERACTION ANALYSIS

Participants were introduced to Interaction Analysis in a large group setting. The major ideas from Karl Openshaw's paper on coding systems were explored. According to Openshaw, coding as a shortcut method to observing teacher behavior, is a very effective tool. Three kinds of coding systems exist: cognitive, affective, and psychomotor. Flander's coding system is in the affective domain.

The remainder of the session was devoted to laying the groundwork for coder training, increasing knowledge and understanding of categories, and giving some idea of the power of interaction analysis as an objective feedback technique.

After reading a paper on the Flanders' Interaction Analysis Coding System, the group was given a detailed explanation of the ten categories. Each of the categories were discussed. The group then focused their attention on the research findings related to direct vs. indirect teaching. It was emphasized through group discussion that IA coding is a method of obtaining a sample of the interaction so that hypotheses may be made on the classroom interaction being coded. This enables the teacher to examine the pattern of classroom interaction to determine needed change. An evaluation of the percent of interaction found in each category and the patterns of interaction must be related to the goals of the teacher.

The remainder of the session was spent in defining each category in Flanders' system of interaction analysis and role playing of the categories.

SEMINAR GROUP SESSION

Participants divided into the seminar groups organized the previous day. The seminar groups discussed Flanders' system of verbal interaction coding. They addressed themselves to the following questions:

1. How objective are the categories?
2. How is it possible to differentiate between the categories in a classroom?
3. Do the categories apply to all teachers in all settings?
4. If not, how can the categories be modified?
5. Does it help teachers become more aware of the relationship between teacher behavior and student behavior?

The remainder of the morning session was spent coding from training tapes produced by Ned Flanders. Discussion followed disagreements in coding.

SEMINAR GROUP SESSION

Group A

Micro-teaching as an improvement strategy in the MOREL program was introduced. The participants were provided with an overview of their activities for the remainder of the afternoon. Each participant selected a skill to practice in the micro-teach which was to follow. It was stressed that subject matter content was not important for the exercise; in a micro-teach, attention is focused on a specific skill.

The group went to Beaubien Junior High in Detroit where each participant taught a micro-teach cycle. Each trainee was critiqued by a MOREL staff member, and planned for improvement in the re-teach which followed. The participant taught his second lession to a different group of students.

Group B

Group members were provided with the materials necessry to construct a matrix: code sheets, raw data, working matrix and final matrix forms. The group was shown how to translate the raw data on to a matrix form. Two group members constructed a matrix from the data. The remaining members of the group interpreted the matrix, identifying patterns of behavior. The group as a whole discussed the matrix construction and the interpretations made from the matrix. It was pointed out that the group should refer to the matrix interpretation section in _Role of the Teacher in the Classroom_ when interpreting matrices in the future.

Group C

Raw data collected from a classroom was provided to each member of the group. They were shown how to translate the raw data onto a matrix form. Participants then constructed a matrix from the given information. Results were explained and questions from the participants answered. Patterns of behavior identifidd in the matrix were discussed. The group working as a team made a complete interpretation of the matrix they had constructed. Matrices in the _Role of the Teacher in the Classroom_ were examined and each group member took a turn at interpreting the matrix and analyzing the matrix in order to find patterns of behavior.

WEDNESDAY, FEBRUARY 5

GENERAL SESSION

The session was begun with an introduction of visitors from the MOREL office. Robert Mager's book, Developing Attitudes Toward Learning, was recommended by a workshop participant as an excellent introduction to teaching for novices. A review of the MOREL strategy was conducted. The group was given an overview of the use of behavioral objectives within the strategy. It was emphasized that two areas of the strategy required the use of behavioral objectives: 1) the teachers statement of goals in behavioral terms, and 2) statement of teaching behavior in need of improvement. The leader of the first session was introduced.

Behavioral Objectives

The interns read the programmed book "Preparing Instructional Objectives" by Robert F. Mager. Therefore, the morning session was divided into two presentations: 1) a presentation in how to introduce behavioral objectives to teachers 2) a presentation in construction of behavioral objectives using a sound filmstrip written by James Popham.

The first presentation was begun by stating a behavioral objective for the session: "Given a list of 15 questions in the writing of behavioral objectives, the learner will be able to answer no less than 13 of the questions correctly at the conclusion of this presentation."

Transparencies were used in the presentation to demonstrate the major points when introducing behavioral objectives to teachers. Each conference participant was provided with xerox copies of the transparencies. The presentation included the following points:

1. advantage of behavioral objectives
2. word interpretations
3. definition of important terms
4. construction of behavioral objectives
5. terminal behavior example
6. conditions for behavioral objectives
7. important aspects of behavioral objectives
8. criterion test
9. analysis of behavioral objectives in terms of terminal behavior, conditions, and criterion test
10. informal discussion followed each transparency.

The second presentation involved viewing one of the sound filmstrips written by James Popham. The filmstrip used was entitled "Educational Objectives." The filmstrip reviewed and expanded upon Robert F. Mager's programmed book Preparing Instructional Objectives. The participants were excited by the systemized, programmed style of presentation contained in the filmstrip. Many participants expressed the desire to purchase the complete set from Vimcet Associates.

These important points were brought out during the discussion by the conference participants:

1. There are three kinds of behavioral objectives: cognitive, affective and psychomotor.
2. Behavioral objectives can be effectively used in unit planning and lesson planning.
3. Clearly defined behavioral objectives elicit more explicit teacher activities.
4. Behavioral objectives are the sub-goals of goal setting.

SEMINAR GROUP SESSIONS

Seminar groups convened following the large group session on behavioral objectives. Concerns about the use of behavioral objectives within the MOREL strategy were discussed. Seminar groups concluded the morning with IA coding from audio training tapes. Group leaders assisted participants in analyzing personal coding problems.

SEMINAR GROUP SESSIONS

Group A & C

Student Feedback

A presentation was made to the combined groups on the use of student feedback. The rationale for the assumptions behind the use of student feedback were discussed. A transparency was used to provide participants with an understanding of where student feedback fits into the MOREL In-service strategy. The discussion continued with an examination of the criteria for the construction and use of student feedback. The group gave considerable attention to how the MOREL program uses student feedback. Each member of the group was presented with a package of materials containing Bryan's Student Reaction Forms. Interns explored the relationship between questions on the reaction form and categories in Leader's Coding System. They used a practice kit of 12 completed reaction forms and summary graph to learn the procedure for tabulation and graphing data in preparation for feedback to a teacher. Research findings on use of student feedback were shared with the participants:

A. "Class Reaction Forms to be Used with the MOREL Teaching Skills". "Criteria for the Selection and Development of Written Student Feedback Instruments," MOREL.
B. "Diagnosing Classroom Learning Environment," Fox, Luszke, Schmuck.
C. "Research Findings Related to Student Feedback", Dennis Bryan.
D. "Some Observations Concerning Written Student Reactions to High School Teachers." Roy Bryan.

Group B

Micro-teaching as an improvement strategy in the MOREL program was introduced. The participants were provided with an overview of their activities for the remainder of the afternoon. A list of Technical Skills of Teaching was discussed, and each participant chose one skill from the list to practice in the afternoon micro-teach. A behavioral objective for the technical skill was written by each group member. It was stressed that subject matter content was not important for the exercises; in a micro-teach, attention is focused on a specific skill.

The group went to Beaubien Jr. High School in Detroit where each participant taught in a micro-teach. Each trainee was critiqued by a MOREL staff member; and planned for improvement in the re-teach which followed. The participant taught his second lesson to a different group of students.

THURSDAY, FEBRUARY 6

SEMINAR GROUPS

Each group viewed a video tape and coded the classrom interaction. This exercise was designed to prepare the trainee for coding in a live classroom. Coding disagreements were discussed. The video taped classroom interaction was discussed for patterns of behavior which could be observed without the aid of a coding device.

TECHNICAL SKILLS OF TEACHING

The presentation was begun with the group viewing a video tape depicting Dwight Allen's (18) Technical Skills of Teaching. The interns were asked to identify as many of the teaching skills as they could find in the video tape. All 18 Technical Skills of Teaching were represented at least once in the video tape.

The session continued with the formation of six groups of three interns Each group role-played the application of technical skills. The three defined roles of the simulation were: 1) the teacher on the video tape, 2) the leader critiqueing the teacher, 3) the observer critiqueing the interaction.

A discussion following the role-playing exercise concentrated on the use of the technical skills of teaching and method and style of the critique. Two exceedingly important points established for using technical skills within the analysis and improvement strategy were: 1) the importance of establishing a positive set of openness, and 2) the emphasis on no more than one or two skills at one time.

The materials were distributed and briefly discussed within the large group sessions:

1. Possible Student Behaviors (Eleven Skills)
2. Class Reaction Forms to be used with the MOREL Teaching Skills
3. Questioning Skills Package

SEMINAR GROUP SESSIONS

Group A

The analysis and improvement strategy was reviewed with an emphasis on the role of technical skills of teaching. Teaching skills were viewed as the "meat on the bones of the in-service strategy." Techniques for using technical skills were identified. Attention was given to using data on student behavior as a means of identifying teaching skills which could be improved. The use of teaching skills packages as a "shopping list" for helping teachers determine the improvement he wants to make was explained. Participants felt that the "shopping list" represented an alternative approach to getting started on the improvement strategy.

Group B

This session gave the members of the group an opportunity to discuss problems and issues related to the program.
The discussion focused on the following topics:

1. The technical skills of teaching simulation which they had experienced.
2. The critique process used in the MOREL strategy.
3. The where and how of implementing the program.
4. Appropriate personnel selection for participation in leader training.

Group C

The analysis and improvement strategy was reviewed with an emphasis on the role of technical skills of teaching. Teaching skills were viewed as the "meat on the bones of the in-service strategy." Techniques for using technical skills were identified. Attention was given to using data on student behavior as a means of identifying teaching skills which would be improved. Theuse of teaching skills packages as a "shopping list" for helping teachers determine the improvement he wants to make was explained. Participants felt that the "shopping list" represented an alternative approach to getting started on the improvement strategy.

SEMINAR GROUP SESSIONS

Group A

Reasons for converting broad goals to behavioral objectives were discussed. Greater clarification of activities for both student and teacher was identified as one important result of using behavioral objectives. Some interns showed considerable interest in how to write behavioral objectives in affective domain. Examples of behavioral objectives for affective domain were examined.

Raw data collected from a classroom were presented to each member of the group. They were shown how to translate the raw data into a matrix form. Participants then constructed a matrix from the given information. Results were explained and questions from the particppnats answered. Patterns of behavior identified in the matrix were discussed. The group working as a team made a complete interpretation of the matrix they had constructed. Matrices in The Role of the Teacher in the Classroom were examined and each group member took a turn at interpreting the matrix and analyzing the matrix in order to find patterns of behavior.

Group B

Because group members expressed a need to strengthen their ability to interpret an interaction analysis matrix, the matrix interpretation transparencies from Flanders' Role of the Teacher in the Classroom were used. Matrix interpretation exercises 1 and 6 were distributed for evening practice. Matrix interpretation continued with an examination of the questions on pages 65-71 in Flanders' book.

A presentation was made to the combined groups on the use of student feedback. The rationale for and assumptions behind the use of student feedback were discussed. A transparency was used to provide participants with an understanding of where student feedback fits into the MOREL In-service strategy. The discussion continued with an examination of the criteria for the construction and use of student feedback. The group gave considerable attention to how the MOREL program uses student feedback. Each member of the group was presented with a package of materials containing Bryan's Student Reaction Forms. Interns explored the relationship between questions on the reaction forms and categories in Leader's Coding System. They used a practice kit of 12 completed reaction forms and a summary graph to learn the procedure for tabulation and graphing data in preparation for feedback to a teacher. Research findings on use of student feedback were shared with the participants:

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B. "Diagnosing Classroom Learning Environments" Fox, Luszki, Schmuck.

C. "Research Findings Ralated to Student Feedback," Dennis Bryan.

D. "Some Observations Concerning Written Student Reactions to High School Teachers," Roy Bryan.

Group C

Micro-teaching as an improvement strategy in the MOREL program was introduced. The participants were provided with an overview of their activities for the remainder of the afternoon. A List of Technical Skills of Teaching was discussed, and each participant chose one skill from the list to practice in the afternoon micro-teach. A behavioral objective for the technical skill was written by each group member. It was stressed that subject matter content was not important for the exercises; in a micro-teach, attention is focused on a specific skill.

The group went to Beaubien Junior High in Detroit where each participant taught in a micro-teach. Each trainee was critiqued by a MOREL staff member, and planned for improvement in the re-teach which followed. The participant taught his second lesson to a different group of students.

MONDAY, FEBRUARY 10

DATA GATHERING IN SCHOOLS

Conference participants, generally divided along seminar group lines, reported to the three schools used for data gathering: Beaubien Junior High, Detroit; Nankin Mills Junior High, Nankin Mills; Whittier Junior High, Livonia. Each participant had an opportunity to code in a classroom, audio tape a classroom, talk to the teacher, observe the class in session, and gather student feedback.

The basic strategy (with minor deviations) used for the collection of data was: Interns were paired in teams. Four to six interns to a school. Two teachers were paired with each team of interns. One intern functioned as a coder; the other intern functioned as an in-service leader. The interns changed teachers for the second observation. They also changed roles--the coder became the in-service leader; the in-service leader became the coder. The leader did the naturalistic observation, gathered student feedback and talked to the teacher.

PREPARATION OF DIAGNOSTIC PROFILES

Following lunch, conference participants returned to Madonna College and worked in their groups. Each seminar group became involved in the same process.

The participant who performed the function of coder gave the codes to his team member. The in-servcice leader plotted the raw data on a matrix. All computations were made in preparation for interpretation. Matrices were checked for accuracy.

Data gathered using student feedback instruments were tabulated and plotted. Participants cross-checked each other. Discussion focused on coding in a live-classroom, matrix interpretation, and techniques for gathering student feedback.

Each participant prepared a diagnostic profile on the teacher he observed as in-service leader. The information included an interpretation of the matrix, an interpretation of the student feedback, observations made in the classroom, and information gained in talking to the teacher at the school. Participants, working together, role-played their feedback techniques. Discussion continued with an exploration of methods for presenting feedback to teachers.

TUESDAY, FEBRUARY 11

FEEDBACK TO TEACHERS AT SCHOOLS

The conference participants went to the schools and met with the teacher for whom he prepared a diagnostic profile. The classroom teacher was freed from classroom responsibilities by a substitute where necessary. The feedback session was held with only the teacher and leader present. Each session was taped.

The in-service leader helped the teacher to an understanding of the data collected. The teacher was shown how to read the matrix. Each of Flanders' codes was discussed and interpreted for the teacher. A graph of the student feedback was analyzed with the teacher. The teacher was encouraged to interpret the data. He then selected some aspect of his teaching behavior which could be practiced in a micro-teach.

In some cases, when the teacher did not understand the micro-teach process, the leader discussed the method, format and purpose of a micro-teach. In a few circumstances, follow-up on preparing for the micro-teach was done in the evening by phone.

CRITIQUES OF FEEDBACK SESSIONS

Following the feedback session with the teacher, the intern met individually with a MOREL staff member. Some critiques were made at the school site, with the majority of the critiques conducted at Madonna College.

The participant and staff member discussed the experience of feeding back a diagnostic profile. The tape of the feedback session was listened to. Attention was focused on the data presented to see if the participant had data collection, interpretation, preparation, and presentation skills sufficiently mastered from previous sessions. Attention was focused on how the participant as an in-service leader could most effectively work with a teacher. The in-service leader was helped to look into his behavior and analyze it. Those areas needing improvement were identified and plans were made for change.

WEDNESDAY, FEBRUARY 12

PRACTICE CODING

A short explanation of the coding accuracy check was given to the conference participants. They were informed that a more detailed explanation would follow on Friday using their own coding data. Participants understood that the activity was designed to build coding objectivity to the 70% level of agreement.

After this short explanation, interns were introduced to a simulation exercise which included a bell tone ringing each 12 seconds. The exercise was coded by the group A brief discussion followed and a suggestion was made that interns compare coding data with other group members; and that these codes be compared to the script for the simulation exercise.

SEMINAR GROUP SESSIONS

Group A

Group A concentrated their efforts on the micro-teach to take place later in the day at Beaubien Jr. High. The group discussed the teach-reteach structure of the micro-teach. Considerable time was spent on the elements of the critique process. It was pointed out that the leader must be supportive while helping the teacher to examine personal teaching behavior in relation to the objectives of the micro-teach. The micro-teach process as part of the analysis and improvement strategy was explored.

Group B

Group B played Simulation Exercise I and compared coding data for discrepancies. The group discussed and agreed upon the specific code for each interaction

During the remainder of the morning, the group shared classroom experiences, feedback sessions, and critiques. The group was surprised that the dissimilar means for collecting data resulted in almost identical information about the teacher The Interaction Analysis data and student feedback data reinforced the interns' naturalistic observation of the teacher.

Some of the group members had never been in a predominately black school. Discussion centered on the experience of being in a predominately middle-class balck school for the first time. This led to a discussion of the emotionalism involved in reaching a catharsis on racial discrimination in our society. The group agreed that successful efforts toward combating racism must be built on such a catharsis.

The group explored Interaction Analysis, time lines and Interaction Analysis pattern forms. The time line and pattern forms were identified as quick methods for building and interpreting matrices. The session continued with an example of the subscription of Interaction Analysis. The two-digit coding systems was explained and discussed. The group was informed that the subscription of more than two categories at one time, because of its difficulty, was not advisable.

Other approaches to subscripting were discussed. It was observed that each technical skill could be subscripted by focusing on that particular skill within the micro-teach or the classroom.

Group C

The group practiced using the Flanders training tapes to further develop accuracy. During this session, the bell tone was added through the use of the continuous-play cartridge. The activity was designed to familiarize the participants with the tone of the bell added to the taped activity. Initially, the group experienced some confusion and inability to simultaneously code the activity and place slash marks in the data at the sound of the bell. Practice continued until each member felt comfortable in the process.

SEMINAR GROUP SESSIONS

Group A

With the help of the leader each member of the group practiced the operation of the video tape equipment. Practice in operating the VTR continued until each group member became reasonably comfortable that he could operate the equipment during the afternoon micro-teach.

The participants went to Beaubien Junior High School. At Beaubien each participant assumed the role of inservice leader. Some leaders assisted in setting up the equipment for the micro-teach clinic. Each leader had his own micro-teach room. Upon the arrival of the teachers from their regular teaching assignments, each leader met with the teacher with whom he had previously worked. The micro-teach process and its relationship to the analysis and improvement strategy was discussed. The goals and objectives for the afternoon's micro-teach were determined. In some cases, the leader assisted his teacher in the construction of a student feedback instrument. As the discussion continued the apprehension of the participating teachers seemed to diminish.

Students in groups of five and six participated in the micro-teach as the scaled down class. The leaders ran the VTR equipment during the micro-teach. After releasing the students, at the end of the micro-teach, the teacher and leader viewed the tape. Each leader assisted his teacher in planning for the re-teach. The re-teach was conducted with a different group of students. Following the re-teach the tape was critiqued. Each critique session was audio taped to form the basis for a discussion of the critique with the training leader. Plans were made with each teacher for the leader to return to the classroom on the following Monday to collect data on the level of success in applying the behavior practiced in the micro-teach.

GROUP B

Conference participants were given 59 summary statements of findings from research on improving teaching effectiveness. The statements were studied and discussed to provide participants with an understanding of the selection of techniques and procedures employed in the MOREL Teacher Behavior Improvement Program. The discussion continued with a focus on the mediator of research to educational problems.

The group was then presented with seven simulated situations as a technique to involve the group in the utilization of the research findings discussed earlier. Questions on each situation were written out by group members. The group then discussed each answer.

Group C

The afternoon session began with a continuation of the morning session. The data collected by coding a practice tape were used by participants to build a matrix which group members compared and discussed.

This activity was followed by the viewing of two filmstrips from the Vimcet series on behavioral objectives. The first one, "Selecting Appropriate Objectives", dealt with the desirability of selecting activities and objectives that relate to all cognitive levels rather than selecting only those that deal with memory.

The second filmstrip, "Criteria of Performance," gave suggestions for writing the level of expected performance into the objective. Both filmstrips were discussed in depth.

THURSDAY, FEBRUARY 13, 1969

CODING OBJECTIVITY TEST

The interns coded bell toned Simulation Exercises II and III as record for determining their coding objectivity.

The following procedure was followed: 1) familiarity with the adult voices and the audio-tape was necessary, therefore, the group listened to the exercises before coding, and 2) coding the Simulation Exercises with a bell tone. The conference participants drew slash marks through the code records at the sound of the bell.

After the coding objectivity test, the technique of making out bell signal triads was explained. The conferees proceeded to place the bell signal triads on the I.A. Coding Matrix Tally Form.

SEMINAR GROUP SESSIONS

Group A

The group began by discussing their micro-teach experiences. The value of micro-teaching as an improvement strategy in the MOREL Program was further reinforced. The group wanted to look at a micro-teach tape and critique it together. One member used his tape; gave the group the teacher-stated goal; and explained the teaching strategy for the micro-teach session.

The group had difficulty in agreeing on what to look for in the tape and further discussion on how a critique is handled was necessary. The group members stated a need for more knowledge of the "technical skills of teaching"; the use of subject content in a micro-teach; and strategies needed by a teacher to reach her goal in a micro-teach.

Group B

The group discussed the Objectivity Test and its validity. They recongized the necessity for coding accuracy. It was agreed that a live coding situation would produce a greater degree of accuracy. The group further recognized that accuracy from a coding simulation exercise would insure higher accuracy in a live classroom situation. Consensus of the group about coding disagreements led to a review of the Interaction Analysis ground rules.

A discussion followed concerning the logistics and mechanics needed to implement the program. There was a strongly expressed concern for a MOREL Training Kit and more availability of technical aids that could be purchased by conference participants.

Group C

The group explored the possibility of using coding systems to examine specific types of behavior more closely. This discussion led to an examination of subscripting the Interaction Analysis codes. Several examples were given from the MOREL manual on subscripting.

Participants wanted to spend time discussing ways to design learning activities to help students reach the behavioral objectives set for them. A modified systems-analysis approach was outlined using a simple flow chart to show how the activities, criteria of performance, and behavioral objectives tie together.

SEMINAR GROUP SESSIONS

Group A

A group member had been involved in helping teachers develop behavioral objectives for several content areas in his school system. This member and the group leader discussed the value of working with behavioral objectives; how teachers began to more clearly see the teaching act; how teachers were able to be more selective in teaching materials; and how teachers could evaluate what students were learning when they wrote behavioral objectives.

The remainder of the afternoon was spent on planning for the mini-conference. Materials were selected, further discussions and clarification of the analysis and improvement strategies were carried on, methods of presentation were shared, and group members selected partners to work with.

The leader critiqued two micro-teach feedbacks with two interns of the conference.

Group B

After lunch the groups spent a considerable length of time preparing for the micro-teach of their teachers. The group constructed their own student feedback instruments and duplicated them for use by teachers. Behavioral Objectives were written for their critiqueing of the micro-teach. The approach was strictly clinical in that each conferee worked on any area related to the afternoon micro-teach, with the leader's help.

Each intern participated in a hands-on practice with the video-tape equipment. Various operational difficulties were explained and worked through by the conferees. Questions regarding models of equipment and the cost figure were answered during the hands-on practice.

Group C

Conference participants were given 59 summary statements of findings from research on improving teaching effectiveness. The statements were studied and discussed to provide participants with an understanding of the selection of techniques and procedures employed in the MOREL Teacher Behavior Improvement Program. The discussion continued with a focus on the mediation of research to educational problems.

The group was then presented with seven simulated situations as a technique to involve the group in the utilization of the research findings discussed earlier. Questions on each simulation were written out by each group member. The group then discussed each answer.

FRIDAY, FEBRUARY 14

TEST OF CODING OBJECTIVITY

The triads formed from the previous day of coding using the bell tone were returned to the respective participants. The participants worked in groups of three. They found agreements of total comparisons for the possible pairings within the group and calculated percents of agreements a, b, and c as defined in Monograph 1. They estimated accuracy by the square root method for the two coder case, and calculated some estimates using the equations for the three coder case. There was little total group instruction. There was a great deal of interaction between MOREL staff members and the members of the groups.

CONDITIONS:

Participants were placed in groups that cut across their training group lines Scores would be expected to be higher if the comparisons were made between people who had trained together and had experience in cross-checking their coding with each other. Participants were learning how to use the formula for figuring objectivity in the same session that they were being checked.

RESULTS:

Each participant coded with an accuracy of better than 70%.

SEMINAR GROUP SESSIONS

Group A

The group explored the possibility of using coding systems to examine specific types of behavior more closely. This discussion led to an examination of subscripting the Interaction Analysis codes. Several examples were given from the MOREL manual on subscripting. Visiting members from Group C involved themselves in giving assistance to some Group A members in furthering their knowledge of subscripting.

Group B

The group was concerned about their proficiency in critiqueing a micro-teach. Consequently, two audio tapes were played and reacted to by the participants. After the group discussed the critique, it was concluded that their expertise was obviously higher than they had believed.

The group recognized how essential peer feedback and peer support are to the implementation of the analysis and improvement strategy.

Group C

Group members concentrated their efforts on the micro-teach to take place later in the day at Beaubien Junior High. The group discussed the teach-reteach structure of the micro-teach. Considerable time was spent on the elements of the critique process. It was pointed out that the leader must be supportive while helping the teacher to examine personal teaching behavior in relation to the objectives of the micro-teach. The group discussed the micro-teach process as part of the analysis and improvement strategy was explored.

SEMINAR GROUP SESSIONS

Group A

Conference participants were given 59 summary statements of findings from research on improving teacning effectiveness. The statements were studied and discussed to provide participants with an understanding of the selection of techniques and procedures employed in the MOREL Teacher Behavior Improvement Program.

The group was then presented with seven simulated situations as a technique to involve the group in the utilization of the research findings discussed earlier. Questions on each simulation were written out by each group member. The group discussed each answer.

Group B

The group discussed goal-setting and goal setting techniques in relation to the inservice strategy. The group concluded that properly defined goals were the "fine threads" which weave through the Teaching Behavior Improvement Program.

The Wisconsin Guide to Curriculum Building, Junior High Level, was examined by the group. Examples of well-defined achievable goals were selected from the Wisconsin Guide and reacted to.

The goal-setting discussion evolved into another discussion of sub-goals and further work with behavioral objectives. Group B was combined with some members from Group C to view a second programmed sound filmstrip, written by James Popham, entitled "Selecting Appropriate Objectives." At the conclusion of the filmstrip, questions form the group were sought concerning the construction of the three types of behavioral objectives: cognitive, affective, and psychomotor. The questions that resulted in the most controversy were centered on the issues of whether an affective behavioral objective could be written without it being expressed as a broad goal.

The groups agreed that affective behavioral objectives can be effective especially when supported with cognitive and psychomotor behavioral objectives.

Group C

The participants went to Beaubien Junior High School. At Beaubien each participant assumed the role of in-service leader. Some leaders assisted in setting up the equipment for the micro-teach clinic. Each leader had his own micro-teach room. Upon the arrival of the teachers from their regular teaching assignments, each leader met with the teacher with whom he had previously worked. The micro-teach process and its relationship to the analysis and improvement strategy was discussed. In some cases, the leader assisted his teacher in the construction of a student feedback instrument. As the discussions continued the apprehension of the participating teacher seemed to diminish. The particular goals and objectives for the afternoon's micro-teach were determined.

Students in groups of five and six participated in the micro-teach as the scaled down class. The leaders ran the VTR equipment during the micro-teach. After releasing the students, at the end of the micro-teach, the teacher and leader viewed the tape. Each leader assistdd his teacher in planning for the re-teach. The re-teach was conducted with a different group of students. Following the re-teach the tape was critiqued. Plans were made with each teacher for the leader to return to the classroom on the following Monday to collect data on the level of success in applying the behavior practiced in the micro-teach.

Following the conclusion of each micro-teach, the intern and a MOREL leader met to critique the intern's behavior during the micro-teach. The audio tape made during the micro-teach critique was listened to and segments of the teacher's micro-teach viewed. Attention was focused on the intern's skills in helping the teacher examine his own behavior during the micro-teach. Where necessary, the intern was assisted in establishing possible alternative critique behaviors for a micro-teach.

SATURDAY, FEBRUARY 15

ADMINISTRATORS' LUNCHEON MEETING

Superintendents and administrators from the districts represented by participants in the Leader Training conference convened at the Dearborn Inn for a discussion centered on the support required for the implementation of the Teacher Behavior Improvement Program. The initial presentation examined the history of MOREL and development cycle which produced the program. The second presentation explored in detail the program and the analysis and improvement process which enables teachers to successfully modify their classroom behavior.

Each administrator recieved a copy of the Leader Conference Daily Schedule. The schedule was used as a base for discussing the conference design. Activities conducted to implement the conference design were shared with the group. The techniques and skills acquired by conference participants were identified.

The administrative support necessary for a successful implementation of the program was identified as psychological, personal and physical.

1. Psychological support is needed by both the leader and the participating teacher. The administrator should discuss the program with enthusiasm. He should use the positive approach in organizing participants. The administrator's role as change agent may be used to help the program in the "getting started" phase.

2. Personal requirements and costs for support to the Teaching Behavior Improvement Program, were grouped into three categories:
    a. Leaders' time. One half yearly salary.
    b. Participating teachers' time. Four hours per week per teacher.
    c Students for micro-teaching.

3. The optimum physical requirements for support of an operating program were identified as:
    a. Video-tape equipment. Cost range $1700 - $3200.
    b. Audio-tape equipment. Cost - $120.
    c. Video tapes. Cost range $90 - $600.
    d. Audio tapes. Cost $75.
    e. Books. Cost $16 per teacher.
    f. Materials - paper reproductions etc. Cost $10 per participant.
    g. Meeting rooms for the FAU and office space for the leader.
    h. Other items normally found in the school which could be used, but not exclusively in the program included: movie projector, overhead projector, storage and file cabinets.

Following the formal session the participants moved to the adjacent dining room for lunch. Discussion continued on an informal, small group basis throughout lunch. The meeting was adjourned.

MONDAY, FEBRUARY 17

EVALUATING CHANGE

Each conference participant returned to the classroom of the teacher on whom he had gathered data the previous week. The purpose of this vist was to gather data to evaluate change in teaching behavior that had taken place as a result of participating in the MOREL strategy.

In general, the format for data collection used during the previous week was repeated. Interns were paired in teams. The in-service leader did the naturalistic observation, while his team member coded the lesson.

PREPARATION OF DATA

Following the collection of data the intern remained at the school and processed the raw data into a useable form. The codes were plotted on a matrix and all computations were made in preparation for interpretation. Special attention was given to data which demonstrated change in the behavior which the teacher had practiced in the micro-teach.

Several interns, interested in their effectiveness as an in-service leader and the effectiveness of the MOREL in-service program, designed a feedback instrument to be filled out by the participating teacher. Although each feedback instrument was different, the questions generally focused on the following topics:

1 Teacher's understanding of the MOREL Teaching Behavior Improvement Program.
2. Evaluation of the program as an effective in-service technique.
3. Desire by the teacher to continue involvement in the MOREL program.
4. MOREL intern's ability to be non-threatening to the teacher.
5. Apparent ability of the intern to implement the MOREL program.

FEEDBACK TO TEACHER

Each conference participant met with the teacher for whom he prepared feedback data. In most cases the meeting was held after the teachers' regular school day. The session was privately held with only the teacher and leader present. Each session was taped.

The in-service leader assisted the teacher in evaluating the data. Change in behavior was identified and discussed. The intern helped the teacher to examine his behavior in relation to the goals of the classroom session. The in-service strategy and activities in which the teacher had been involved were discussed. Where appropriate the intern asked the teachers to complete the feedback instrument. The teacher was thanked for his participation and arrangements were made for renumeration of the teacher's personal time spent in the program.

CRITIQUE OF FEEDBACK SESSIONS

Following a workshop dinner at the Hillside Inn, two groups returned to Madonna College for a critique of the feedback to teachers. Seminar Group A was able to complete its critique prior to dinner.

The critique was performed by the seminar group with the leader assisting. Groups discussed the effectiveness of the analysis and improvement strategy. Several tapes of feedback sessions were listened to. The intern performing the role of in-service leader, provided the background required for an understanding of the proceedings. Feedback sessions were critiqued by focusing on the inerrpretation, preparation and presentation of skills of the intern.

TUESDAY, FEBRUARY 18

USING SIMULATION AND GAMING FOR ENTRY

The trainees were challenged to look toward simulation and games as a means of communicating; lessening the threat of change; and achieving maximum involvement in the Program. The first example was a block game in which two trainees were seated back to back. There was a table in front of each. On each table, there were three 2 by 4's. Two of the boards were painted green and the others were painted red.

The purpose of the game was to use the blocks to create a design on one table. The first trainee challenges the second trainee to place his blocks in the same configuration by using his questioning skill to obtain feedback. The trainee who was questioned could only answer yes and no.

The second example was a form of role-playing in which the teacher used visual cues to alter his behavior. The trainee playing the role of the teacher selected four or five trainees. Each trainee was given three colored cards. During this lesson a card was shown at all times so that the teacher knew how well he was communicating. A green card means that the trainee was receiving the teacher's message. A yellow card meant that the trainee was not receiving the message too clearly, and a red card meant he was not receiving a message--only words. It was the teacher's job to use his teaching behavior to keep the red and yellow cards down.

The final example involved a modification of the in-basket technique. Directions for this game were on tape. After the directions were given, each participant took an envelope from the in-basket and responded to it. These responses generated interaction and interesting points of view were expressed. It was stressed that this interaction should be taped and critiqued in terms of desired goals.

ENTRY TO FIELD ACTION UNITS

A participant from the first MOREL Leadership Training Workshop spoke to the interns about the re-entry process. He described the procedure which he followed in obtaining volunteers for a Field Action Unit in his school. Upon returning from the first workshop he informed his faculty of the techniques, and curriculum of the inservice program. This activity was followed with periodic messages containing quotes from Gardner, Flanders etc. As interest began to grow he increased the specificity of the messages by describing technical skills and he used some of the vernacualr in the in-service program (i.e. micro-teaching, matrix, behavioral objectives). Research on teaching behavior was presented in additional communications. When he felt the faculty sufficiently challenged and interested, he called a faculty meeting for those interested in hearing more about the in-service program. At the faculty meeting, he was able to generate ample enthusiasm from the teachers present to organize an FAU for his building.

Problems related to leading an FAU were discussed with the leader. It was stressed that each participant in the workshop would establish his own individual style of re-entry and implementation of the in-service program. The procedure for getting started with an in-service program would depend upon the nature of the faculty, school, district and the relationship of the participant to these factors.

MINI-CONFERENCE

Participants organized into groups of two and three and began making plans for presenting the MOREL Teaching Behavior Improvement Program to an audience of six to twelve student teachers. The student teachers attended Madonna College. Each conference group had the responsibility to prepare the format and material for the presentation of the MOREL program and its components. A great variety of presentation formats were used by the interns. The activity provided the interns with an opportunity to synthesize their experiences, and gain confidence in their ability to clearly explain the MOREL program. The interns were provided with an opportunity to handle questions from conferees.

The mini-conference experiences also assisted the interns in evaluating approaches and materials which could be used to facilitate the acceptance of the in-service program by administrators and teachers.

WEDNESDAY, FEBRUARY 19

CONFERENCE ON INNOVATION AND CHANGE

Arrangements were made to allow each intern to participate in the opening sessions of Wayne County's Conference on Innovation and Change. The first speaker on the program was Dr. Jack Frymier, who spoke on "The Change Process: What Is It?"

Dr. Frymier highlighted incidents which depicted aspects of the change process. He then moved into a picture of the theoretical dimensions involved and important in considering change. He further identified dynamics of change in both particular terms and in broad context. From this discussion he extracted ideas about change meaningful for educators.

Dr. Frymier's major thesis was that "At the moment, education, theoretically, is incapable of rational and deliberate change." From Dr. Frymier's perception of the educational system, rational change is not possible without external (to the system) evaluation. Since objective evaluation of the schools and its products is not being conducted, rational change is impossible.

The second speaker, Dr. Richard Foster, spoke on "The Change Process: How It Is Implemented." Dr. Foster suggested that change in schools could begin to take place if we recognize that some educators are working from the wrong hypothesis of learning.

1) Children don't want to learn.
2) People are not capable of learning on their own.
3) Kids left alone will result in anarchy.
4) Education is a possession of information.
5) We need to turn out people to fit his (present) world.

Effective models for change used by Foster include: new schools; exchange teaching; school within a school; use of community resource people; curriculum material development; and self evaluation.

Foster views the training of teachers in our colleges, as being void of a workable design. He expressed criticism for the line-staff relationships in the schools. He further cited these authority relationships as detrimental to an innovative spirit.

Following the speeches of Frymier and Foster, the Leader Training Conference participants convened as a large group to discuss the implications of what they had heard about the change process. It was emphasized that attendance at such an activity was not part of the regular leader training design, and that such attendance should not be considered when evaluating the conference.

POST CONFERENCE EVALUATION

Following lunch, each participant was given a packet of conference evaluation instruments. Each packet contained the following instruments:

1) Post Conference Check List.
2) Rating of the MOREL techniques for assisting teacher behavior change.
3) Evaluation of the suitability and completion of the conference objectives.
4) Post Conference Evaluation Questionnaire.

Adequate time was given to complete the instruments. Each participant was asked to turn in the Daily Log which had been kept throughout the conference.

The Conference was adjourned.

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TEACHER BEHAVIOR AND STUDENT LEARNING

Why should teachers want to examine their teaching behavior? How will this contribute to improved teaching and increased learning? Let's look to what a few selected studies have shown to date in answering these questions.

There is a relationship between certain patterns of teaching behavior and what students learn. Research evidence isn't available yet to enable prediction that a particular set of practices will likely produce a given result with students. However, some generally positive relationships can be described which are useful for the teachers interested in self-improvement. There are also some teacher behaviors which are related to negative effects on student learning, often in ways unintended by, unanticipated by, or unknown to the teacher.

Another complicating factor in looking at teacher impact on students is that a teacher with the same (consistent) behavior may produce different results with different types of students. Certain teachers seem to work well with one age group or grade level but not others, or with certain subject fields, or with boys, or with inner city children, or with retarded children etc. The important point is that there is no one "package" that can be wrapped up and labeled "good teacher." So the purposes of MOREL in examining teacher behaviors are not to find "ideal" teacher behaviors but to help teachers to: (1) become more aware of what they actually do as they work with students; (2) discover for themselves the effects of their behavior on student learning; (3) find ways to develop some new approaches, new behaviors, which will be more effective in attaining their own goals; (4) and learn the use of various techniques which will be helpful in one's continuing analysis of his teaching behavior.

In this process of self-examination, self-evaluation and self-directed change it is essential to go beyond superficial evidence and global impressions about classroom activities. For example, the major criteria commonly used to evaluate teachers or that teachers use to evaluate themselves can be described as follows:

(1) "The classroom is orderly and the children seem attentive and interested".

(2) "The teacher had a lesson plan and followed it".

(3) "The teacher knows his subject matter well".

Many, if not most, teachers, supervisors and administrators are content if there is an absence of discipline problems and parental complaints, if teachers conform in grooming and general behavior to community norms and if students, parents and other teachers feel he has sufficient knowledge of the subject fields he is supposed to teach. As has been indicated previously these kinds of data are inadequate, by themselves, as the basis for a program of professional growth for any teacher. What kinds of data are needed then? The following descriptions touch on a few selected behaviors which are either not generally used or not generally known in analyzing the improvement of teaching.

TEACHER EXPECTATIONS

There is evidence that what a teacher expects to happen with individual students or with a class tends to come true. Rosenthal and Jacobson (1) reported a study in which teachers were told to expect gains in I.Q. from specified children by psychologists who had selected the students at random, that is, had figuratively "picked their names out of a hat". Not only did the teachers perceive the children as growing more intellectually, the students actually did make significant spurts in I.Q. measures! An interesting contrast is that many other children had also gained in I.Q. during the year but"...the more they gained, the less favorably they were rated" (1). In sum teachers were told certain students would gain in I.Q. they believed it would happen, they perceived it as happening and it did happen. The teachers were pleased. Other students were not expected to show an increase in I.Q. but they did anyway and teachers found their behavior undesirable (unexpected?) After examination of possible causes, the authors conclude that"...the explanation we are seeking seems to be in a subtler feature of the interaction of the teacher and her pupils. Her tone of voice, facial expression, touch and posture may be the means by which - probably quite unwittingly - she communicates her expectations to the pupils. Such communication might help the child by changing his concept of himself, his anticipation of his own behavior, his motivation or his cognitive skills. This is an area in which further research is needed".

Does this research help explain why children from the inner city do less well academically as a group than students in other locations? Expectations are often different and usually lower for such students. However, the findings may have application to all teachers and all students. Whatever the case, teacher behavior and student learning do seem to be related to teacher expectations. One question for each teacher to ask himself is what he really expects to happen with each student and each class he faces. Does he know? If not, does he know how to find out? Does he know what effect his expectations are having on his students?

VERBAL INTERACTION

The work of Ned Flanders and others demonstrate a relationship between certain patterns of "teacher talk" and student learning. This is treated in a detailed fashion in other publications (2) but severl generalizations might be useful to illustrate this aspect of teacher behavior.

Teachers who interact verbally with students in an "indirect" manner tend to have classrooms in which"...students learned more and possessed more constructive and independent attitudes..." than in "direct" classrooms

Also"...the most direct teachers had more discipline problems..." and "students more often tended to question or even resist the directions given by the most direct teachers".

In these studies, "direct" teachers are those whose statements tend to restrict freedom of participation. Indirect teachers were"...more alert to, concerned with, and made greater use of statements made by students. These teachers went beyond mere clarification and acknowledgement of student ideas; they skillfully integrated student ideas into the content discourse of classroom communication...".

Flanders has developed an interaction analysis model which is relatively simple to learn to use. It can be used by an outside observer and/or by the teacher himself viewing a video tape of his teaching. Teachers are usually surprised and enlightened when they view themselves on TV and/or see the results of an analysis of their verbal interaction with students using Flanders' observation chart. Teacher perception of his teaching act and behaviors while he is in the midst of it is often different than his perception of it as a spectator of a kinescope afterward, particularly if he employs some kind of rational model to examine it with.

CREATIVITY

Certain kinds of teacher behavior foster ingenuity, originality, independent thinking, spontaneity, use of imagination and other qualities associated with creativity. Torrance outlines principles of teacher behavior that foster creative growth in Rewarding Creative Behavior and other publications. In a series of experiments he was able to help teachers learn how to identify various kinds of creative expressions in both academic and nonacademic areas and to use behaviors which would "reward" creative behavior.

His work and that of others in the field of creativity show that creativity is more often inhibited than fostered in most classrooms but that awareness of one's own behavior as a teacher as it affects creative expression can lead to improvement in creative output in the classroom with little additional inservice education. Again self-analysis and self-evaluation led to changes in teacher behavior which caused significant changes in student learning. If the teacher's goals include fostering creativity in any aspect of school work, the means for doing so are readily at hand.

OTHER DATA CONCERNING TEACHER BEHAVIOR AND AND STUDENT LEARNING

Various studies show unintended and, occasionally, unwanted effects on learning.

For example:

(1) If teachers are neurotic, they can generate their neurotic symptoms among students in early elementary school grades.

(2) Students' estimate of their self-worth, their self-esteem and general self concept can be changed by certain teacher behaviors. The self-concept is related to achievement in school and attitude toward teachers and toward learning.

(3) Assignment of marks is sometimes related to sex. Girls tend to be marked higher and shown more positive attitudes by teachers of both sexes. Is there a relationship between this factor and higher dropout rates from school for boys?

(4) Some studies show knowledge about individual students by teachers is significantly related to social class. Teachers know less about students from the "poorest" (socio-economic) families.

(5) When teacher behavior focuses on the causes of events and the causes of human behavior in treatment of subject matter, students learn as much or more subject matter and also learn more about themselves. Ojemann and others have taught specific classroom techniques for teachers to use in their "causal" or "preventive psychiatric" approach, which has produced significant results in learning and improved mental health.

WIDELY USED PRACTICES WHICH PRODUCE NO CHANGE IN LEARNING

The foregoing have illustrated that certain teacher behaviors can and do influence specific student learnings. There is also a kind of backhanded reinforcement for this generalization when we consider the results of research on grouping practices and class size.

The research on grouping practices shows no significant or consistent pattern of change in learning when ability grouping is used. Gifted students do not learn more in special classes nor do slow-learners, contrary to popular belief and general practice. There is no evidence of improved learning when class size is reduced either, which runs contrary to strong belief. However, the evidence is based on what does happen rather than what could happen because the studies also indicate that teacher behaviors were generally the same regardless of type of group or size of class. If teacher behavior is no different with a small group than with a large group should we realistically expect a differnce in learning? The same could be asked when students of widely varying ability are together in a classroom compared with a classroom where there is less difference in the range of abilities. There is no special magic that automatically accrues as a result of being in smaller group or with those of similar ability. The teacher must behave differently as a result of reduction in class size or class composition if changes in learning are to result.

SUMMARY

Changes in teacher behavior can create improvement in academic learning, self-concept, creativity and other areas of learning. In order for these improvements to take place:

(1) The teacher must want to examine his own behaviors and their impact on student learning.

(2) He must have the opportunity to carry out self-examination and obtain knowledge of techniques for doing so.

(3) He will have to identify and/or clarify and specify what he

Wants to accomplish (goals) with students.

(4) He needs time and knowledge of skills necessary for self-evaluation based on self-examination and identification of goals.

(5) He needs time and assistance in developing new behaviors which will lead to improved attainment of goals and, from time to time, in developing new goals.

MOREL STRATEGY FOR ANALYSIS AND IMPROVEMENT OF TEACHING BEHAVIOR

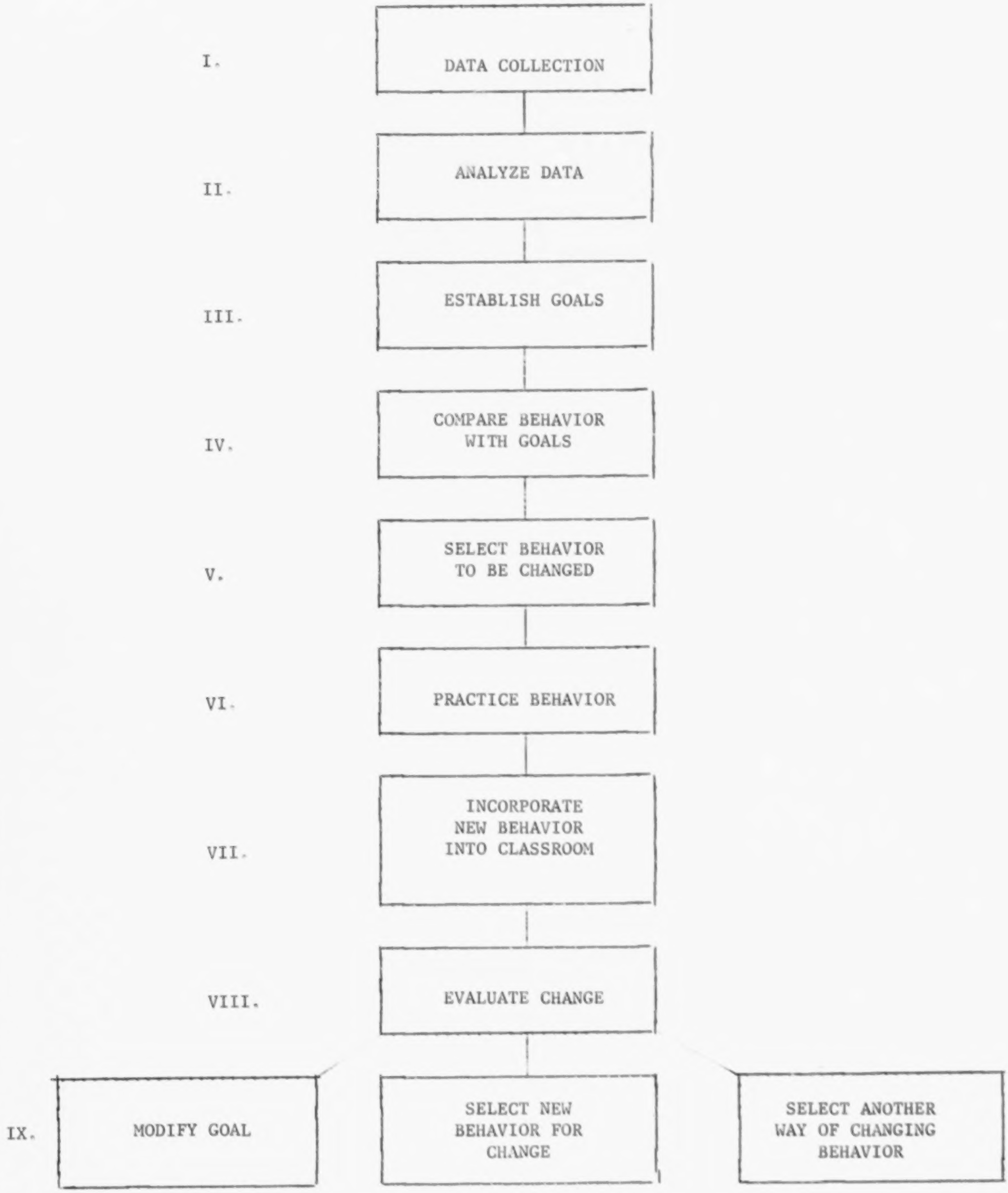
Strategy for Analysis and Improvement of Teaching Behavior

Studies show a significant relationship between certain patterns of teacher behavior and what students learn. While it is necessary to take limitations and cautions into consideration, changes in teacher behavior can create improvement in academic learning, self-concept, creativity and other areas of learning.

The MOREL In-service Strategy helps teachers to:

1. become more aware of what they actually do as they work with students
2. discover for themselves the effects of their behavior on student learning
3. identify valid goals for students
4. find ways to develop some new approaches, and new behaviors which will be more effective in attaining their goals
5. learn the use of various techniques which will be helpful in one's continuing analysis of his teaching behavior

MOREL INSERVICE STRATEGY


I.
DATA COLLECTION
II.
ANALYZE DATA
III.
ESTABLISH GOALS
IV.
COMPARE BEHAVIOR WITH GOALS
V.
SELECT BEHAVIOR TO BE CHANGED
VI.
PRACTICE BEHAVIOR
VII.
INCORPORATE NEW BEHAVIOR INTO CLASSROOM
VIII.
EVALUATE CHANGE
IX.
MODIFY GOAL
SELECT NEW BEHAVIOR FOR CHANGE
SELECT ANOTHER WAY OF CHANGING BEHAVIOR

I. Data Collection

The teacher must have the opportunity to carry out self-examination through the use of data collecting techniques. The MOREL strategy includes a variety of techniques which can be employed to gather objective information about the teacher's behavior. The choice of technique and the number of techniques used is determined by the data collection goal.

Data for construction of a profile of teaching behavior may be collected by using the following techniques:

Verbal Interaction Coding System
Video-taping
Student Feedback
Naturalistic Observation
Audio-taping

Some techniques for data collection (e.g. interaction analysis, student feedback) require the additional step of processing the raw data into a useable form.

II. Analyzing Data

The collection of data must be efficiently and quickly followed with the application of techniques which put the data in useable form. Data analysis must maintain an objective consistency with the collection procedures by using: (1) facts and supporting evidence about the teaching behavior, (2) relationships among the data to determine connecting behaviors, (3) and overall patterns in behavior. The methods for analyzing data which are found within the MOREL strategy include:

Analysis of an interaction analysis matrix
Analysis of student responses to feedback instruments
Analysis of behavior recorded on video tape and/or audio tape
Analysis of data gathered through natural observation, teacher's attitudes, peer feedback

III. Establish Goals

The establishment of teaching goals helps the classroom teacher identify what he wants to accomplish in his classroom. The feedback and analysis of data on his teaching behavior has relevance and meaning only when viewed in relation to his goals.

The in-service leader must find ways to ask of the teacher: What are your goals? Is your behavior consistent with your goals? Why have you chosen these goals?

These questions can be asked each time a teacher participates in a micro-teach, writes behavioral objectives, gathers feedback, plans learning activities, and interacts with students. Goal clarification brings with it direction, self-confidence, and purpose. Attention to goals is a continuous effort which operates as a fine thread throughout the MOREL Inservice Program.

Goals should not be viewed as fixed, particularly for teachers who have had little or no previous experience in identifying their teaching goals. It usually requires several attempts to state goals before some degree of precision is achieved. Even after teachers have learned to accurately describe their goals, however, it should be anticipated that they may occasionally see a need to modify their goals.

Another useful approach is to ask teachers to analyze the relevancy or validity of their goals. What leads them to believe these are appropriate goals? A specific type of activity which is useful in determining relevancy or adequacy is to obtain student feedback toward teacher goals and for teachers to help students identify student goals. Comparison of student goals and teacher goals is valuable input for teachers to consider in establishing and/or modifying teaching goals.

IV. Compare Behavior with Goals

The evaluation the teacher makes of his own behavior is a result of comparing the feedback he receives through the analysis of data with the behaviors required for satisfaction of his goals. The teacher must make judgements about the value of his behavior in relation to the goals he has established for kids. Thus, the criteria the teacher uses for expressing his teaching behavior is what he wants to accomplish with students. Sound evaluation will be possible to the extent that the collection of data and the analysis of that data provides a complete and objective picture. Objectivity is most easily accomplished when based on the sound foundation of a variety of data sources.

The in-service leader must take into consideration his understanding of the teacher and the quality of their mutual relationship. When presented objective data on his behavior the teacher may use a variety of defense and behavior mechanisms to avoid recognition of the incongruities in his behavior and perception of self. The major objective of the counseling process and confrontation of behavior with goals is to help the teacher recognize the dissonance between desired and actual behavior.

IV A

The in-service leader in his counseling role must be viewed as an enabling, non-threatening person. The following are some characteristics of the in-service leader's counseling role:

1. The in-service leader is viewed as expressing warmth, respect and openness toward the teacher.
2. The teacher understands the role and function of the in-service leader.
3. The in-service leader solicits responses and listens carefully.
4. The in-service leader facilitates the clarification of goals, behavior, issues, needs, and problems.
5. The in-service leader shows relevant knowledge and experience when required.
6. The in-service leader facilitates the teacher's ability to make sound decisions about his teaching behavior.
7. The in-service leader protects the priviledged communication which develops between himself and the teacher.

V. Select Behavior to be Changed

The counseling process should lead to the teacher's selection of some behavior he wishes to improve. The selection of behavior may develop from an examination of desired behaviors of students, recognition of dissonance between teaching behavior and goals, choice from a "shopping list" of teaching behaviors, or recognition from data collection of a teaching skill in need of improvement.

VI. Practice Behavior

The classroom teacher must have an opportunity to practice behavior which will lead to the improvement of his teaching. The mode of practice should provide a realistic approximation of the teaching situation and an objective method of evaluation.

Some tested alternatives to in-classroom practice which meet the above criteria are:

Micro-Teaching

Role Playing

VII. Incorporate New Behavior Into Classroom

The goal of the MOREL analysis and improvement strategy, to improve the teacher's behavior in the school setting, may be accomplished under the following conditions:

a. The teacher is given freedom to seek alternative actions;

b. The teacher is given support to test alternatives to his behavior;

c. The teacher learns techniques for gathering feedback on his behavior;

d. The teacher is given freedom and support to establish valid and realistic goals for students;

e. And the teacher is provided with an opportunity to confront his behavior.

Within circumstances which facilitates the above conditions, the teacher will become aware of his interaction with students and he may incorporate into his classroom new behaviors which are consistent with valid goals for students. These changes in teaching behavior can create improvement in academic learning, self-concept, creativity, and other learning for students.

VIII. Evaluate Change

Following the incorporation of new behavior into the classroom a self-renewing teacher will examine his new and old behavior for needed improvement. The thrust behind the analysis and improvement strategy is the teacher's self-renewing attitude. The self-renewing teacher is consistently seeking data on the level of his effectiveness. He seeks varied means for collecting feedback on his behavior. He carefully and objectively analyzes this data to determine areas of strength and weakness, and he develops alternative behavior to secure the best learning experience for his students.

IX. ACTION AFTER EVALUATION

There are a number of possible next steps after evaluation of change. The yardstick to be used in evaluating change would be the extent to which the newly-learned teaching behavior is compatible with the teacher's goals. Is he now behaving in a way which produces better results in teaching-learning than was true previously?

The answer to that question could lead to any one (or more) of the following:

1) Select new behavior for change. If the changed behavior was judged to be successful, the teacher may decide to learn another behavioral change designed to increase teaching effectiveness.
2) Select another way of changing behavior. If the activities or ways used to develop a new teaching behavior are viewed as unsuccessful, new approaches may be selected to learning that behavior (or set of behaviors).
3) Modify goal. The teacher may come to realize that a particular goal is not realistic, relevant or valid as he works to develop teaching behaviors to accomplish the goal. He might well decide to abandon a particular goal or, more likely, to modify it on the basis of experience.

IN-SERVICE EDUCATION

LEADER

IN-SERVICE EDUCATION LEADER

ANALYST COUNSELOR + TEACHER + MEDIATOR OF RESEARCH + PROGRAM ADMINISTRATOR

IN-SERVICE LEADER

ANALYST/COUNSELOR FUNCTION

To use the analysis procedures and processes incorporated in the MOREL program.

To assist teachers to look into their teaching behavior and to recognize the consequence of that behavior.

TEACHER FUNCTION

To explain the analysis procedures and processes used in the MOREL program.

To provide the teachers with the skills for each analysis and improvement strategy.

MEDIATOR OF RESEARCH FUNCTION

To assist teachers in bridging the gap between the findings of research and the classroom setting.

PROGRAM ADMINISTRATOR FUNCTION

To develop a climate within -- school for acceptance of the in-service program.

To motivate teachers to make a commitment.

To make necessary logistic arrangements to properly support the program.

ANALYST - COUNSELOR FUNCTION

TO USE THE ANALYSIS PROCEDURES AND PROCESSES INCORPORATED IN THE MOREL PROGRAM

1. Gather base line data about teaching behavior of each teacher in the FAU.
2. Analyze base line data and prepare a diagnostic profile of each teacher.
3. Develop a plan for continuous classroom evaluation.
4. Modify evaluation instruments to apply specifically to the classroom situation to be evaluated.
5. Design evaluation instruments to be used with teachers and/or students.
6. Use self-designed instruments in the analysis of a teacher's behavior.
7. Use instruments to measure how well his objectives have been met in the various program components.
8. Gather and analyze feedback to measure effectiveness and impact of FAU meetings.
9. Gather and analyze data on effectiveness of guided group interaction.
10. Plan for modification of his behavior when feedback indicates that his behavior is not as effective as it should be.
11. Collect and analyze data about the school setting to find the factors that affect the effectivness of an in-service program.
12. Collect and analyze data about the community to find out if there are influences that might help to hinder an inservice program.

ANALYST - COUNSELOR FUNCTION

TO ASSIST TEACHERS TO LOOK INTO THEIR TEACHING BEHAVIOR AND ITS CONSEQUENCES

1. Counsel with teacher to provide interpretation, advice, and recommendations concerning aspects of teaching behavior.
2. Encourage teachers to collect feedback about their teaching behavior.
3. Help teacher identify the aspects of his behavior that should be modified.
4. Help teachers plan a strategy to modify their behavior.
5. Shift the responsibility for initiation and use of analysis and improvement strategies from the in-service leader to the teacher.
6. Help the teacher recognize the consequences of his teaching behavior.
7. Help the teacher internalize the feeling that he does exercise control over what goes on in the learning situation.
8. Guide group interaction of teachers to identify and hypothesize about common problems.
9. Guide group interaction to provide feedback to an individual about his teaching behavior.
10. Guide group interaction to provide support to teachers who are looking into their behavior and making an effort to modify it.

TEACHER FUNCTION

TO EXPLAIN THE ANALYSIS AND IMPROVEMENT PROCEDURES AND PROCESSES USED IN THE MOREL PROGRAM

1. Describe the rationale behind the MOREL program.

2. Introduce the analysis procedures and processes that are used in the MOREL program for in-service education.

3. Provide a resource collection on the findings of researchers pertaining to importance of the "technical skills of teaching" included in the program.

4. Demonstrate each of the diagnostic tools in the analysis and improvement strategies.

5. Provide opportunities for the teachers to see how diagnostic tools can be combined to provide a better analysis of an aspect of teaching that is important.

6. Guide group interaction to examine the importance of feedback and how it can be used in the classroom.

7. Demonstrate the modification of existing instruments and techniques.

8. Demonstrate how new instruments can be developed as the need arises.

TEACHER FUNCTION

TO PROVIDE THE TEACHERS WITH THE SKILLS FOR EACH ANALYSIS AND IMPROVEMENT STRATEGY

1. Explain the strategies for analysis and improvement of teaching behavior by describing the steps in each strategy and identifying the instruments and techniques that are essential for effective use of strategies.

2. Provide the teachers with the opportunity to determine skills that they will have to acquire in order to use the choosen strategy.

3. Devise a strategy or lesson plan to help the teacher acquire the skills (coding, matrix interpretation, goal statements, use of video tapes, etc.) needed for use of the analysis and improvement strategy.

4. Establish goals in behavioral terms for each of the skills to be acquired so that progress in the skill development can be seen.

5. Teach the skills that are required for use of the analysis and improvement system.

6. Provide an opportunity for the teacher to practice the skills as he is acquiring them.

7. Provide opportunities for the teacher to tie the skills together and use the analysis and improvement strategy with support from the leader and/or other teacher participants in the program.

8. Assist the teacher in sharpening up his skill in the use of the strategy so that it becomes an even more effective tool.

9. Help the teacher evaluate his performance in accomplishing his goals.

10. Encourage teachers to continue the use of strategies for self analysis and improvement.

11. Introduce another strategy for analysis and improvement.

12. Provide opportunities for the teachers to develop their own strategies for analysis and improvement.

MEDIATOR OF RESEARCH

TO ASSIST TEACHERS IN BRIDGING THE GAP BETWEEN THE FINDINGS OF RESEARCH AND THE CLASSROOM SETTING IN WHICH THE TEACHER OPERATES.

1. Provide the teachers with the results of research on each of the components of the MOREL program.

2. Provide the teachers with research findings that demonstrate that a teacher's behavior is a vital factor that affects student's learning.

3. Provide teachers with research that highlights the importance of a teacher's attitudes on the learning climate of the classroom as evidenced by student progress.

4. Help the teachers translate relevant research findings to the classroom situation that the teachers in the Field Action Unit are concerned with.

5. Locate resources for the teachers that are pertinent to the problems of teaching that they are working on.

6. Provide opportunities for teachers to "research" areas of interest to them.

7. Encourage teachers to conduct action research projects in their classrooms.

8. Provide opportunities for teachers to share their experiences with each other.

9. Provide feedback on the in-service program to MOREL so that the action research nature of implemented programs can be incorporated into further refinement and development.

PROGRAM ADMINISTRATOR FUNCTION

TO DEVELOP A CLIMATE WITHIN THE SCHOOL FOR ACCEPTANCE OF THE IN-SERVICE PROGRAM

1. Establish rapport with the school administration.
2. Explain the in-service program -- its rationale, goals, procedures, and requirements -- to the administration.
3. Explain the in-service program to the total staff of the building.
4. Establish and maintain channels of communication to keep the school informed of the activities going on in the program.
5. Participate in the school as a member of the faculty.

PROGRAM ADMINISTRATOR FUNCTION

TO MOTIVATE TEACHERS TO MAKE A COMMITMENT

1. Identify teachers in the building who might be interested in a program of analysis and improvement of their teaching behavior.
2. Explain the program to teachers.
3. Answer questions about the program that are raised by teachers.
4. Discuss goals, benefits, and problems that a participant might encounter in the program.
5. Explain the role of the in-service leader as he relates to teachers, school administrators, and the district.
6. Identify possible intrensic and extrensic benefits of the program.
7. Relate the program activities to the needs of the teachers in the program.
8. Provide opportunities for the teachers to experience a "payoff" from the program.
9. Use other teachers in the Field Action Unit to provide support and encouragement.
10. Utilize the principals of the program in all dealings with teachers where it is feasible.

PROGRAM ADMINISTRATOR FUNCTION

TO MAKE NECESSARY LOGISTIC ARRANGEMENTS TO PROPERLY SUPPORT THE PROGRAM

1. Make suitable time and space arrangements for conducting activities.
2. Make arrangements for human and material resources needed for the operation of program activities.
3. Make arrangements for use of substitutes when necessary.
4. See to it that the equipment is utilized effectively.
5. Coordinate analysis and improvement activities and procedures.
6. Supervise and schedule activities of para-professionals.
7. Document the in-service program as conducted.
8. Keep records necessary for on-going program.
9. Follow-up on the activities of teachers who participated in the program.
10. Set up an office in the school (s) where an in-service program is being conducted.

FLANDERS' INTERACTION ANALYSIS CATEGORIES

The Categories: -- There are ten categories in the system. Seven are assigned to teacher talk and two to student talk. The tenth category classifies pauses, short periods of silence and talk that is confusing or noisy. The category system is outlined on page 7.

The seven categories assigned to teacher talk are divided into indirect and direct influence. Categories one through four represent indirect influence, catefories five, six and seven represent direct influence.

Indirect influence encourages student participation and thereby increases his freedom of action. To ask a question, category four, is an invitation to participate and express ideas, opinions, or facts.

It is true that a question can leave very little freedom of action, but at least the student can refuse to answer, which involves more freedom than passive listening. The more general a question, the greater the opportunity to assert one's own ideas.

In category three, the teacher accepts, clarifies, or uses constructively the ideas and opinions of students. The students are rewarded and encouraged to further participation. Often teachers ignore what a student says; to acknowledge and make use of an idea is a powerful form of recognition.

To praise or encourage student participation, category two, is to solicit even more participation.

The ability to use the feeling tone of a student constructively, to react to feeling and clarify it, category one, is a rare skill. Teachers with this skill can often mobilize positive feelings in motivation and successfully control negative feelings that might otherwise get out of hand.

Flanders' Interaction Analysis Categories

All of these actions tend to increase student participation, to reward student participation, and to give students the opportunity to become more influential. The net effect is greater freedom of action for the students.

Direct influence increases the active control of the teacher and often stimulates conformity and compliance. To lecture, category five, focuses the attention of the students on ideas chosen by the teacher. To give directions or commands, category six, is to direct the activities of the class with the intent of obtaining compliance.

Category seven refers to criticizing student behavior of justifying the teacher's use of authority. These actions concentrate authority in the hands of the teacher.

Direct influence tends to increase teacher participation and establish restraints to student behavior. The ensuing restriction of freedom may occur in terms of compliance to the teacher or be an adjustment to the requirements of problem solving activities. The net effect is less freedom of action for the students.

Of and by itself, neither direct nor indirect influence can be considered good or bad. Each type of influence has its place in the classroom.

The division of student talk into categories eight and nine provides an automatic check on freedom of student action within the system of categories. Usually, but not always, an excessive or above average pattern of direct teacher influence is associated with less student talk and the talk that does occur is usually in response to the teacher--category eight. An above average indirect pattern is usually associated with more student talk and this talk will have a higher proprotion of self-initiated talk--category nine.

Flanders' Interaction Analysis Categories

The use of only two categories to record all kinds of student talk neglects a great deal of information, but the major purpose of these categories is the analysis of teacher influence. The greatest information will accrue from observation if category nine is used sparingly and only on those occasions when the communication is truly student initiated.

For example, a student answering the specific question of a teacher, giving the answer to a problem, or reading material is obviously category eight. Even a student giving an oral report is restricted to an outline and except for unusual circumstances is probably responding to teacher supported restraints.

Category nine should be used to indicate the expression of the student's own ideas in spontaneous interaction. General questions are often a clue that a student may be initiating his own ideas. When a teacher calls on a student who voluntarily raised his hand to speak and asks, "Have you anything to add, Robert?", the chances are that the use of category nine is correct.

The purpose of category ten is to record pauses, silences and periods of confusion as they occur during classroom interaction. It is not intended to record longer periods of silence or confusion, for example, those that are more than two minutes. The continuous use of this category for long periods of silence serves no useful purpose.

CATEGORIES FOR INTERACTION ANALYSIS

TEACHER TALK	INDIRECT INFLUENCE	1.*	ACCEPTS FEELING: accepts and clarifies the feeling tone of the students in a nonthreatening manner. Feelings may be positive or negative. Predicting or recalling feelings are included.
		2.*	PRAISES OR ENCOURAGES: praises or encourages student action or behavior. Jokes that release tension, not at the expense of another individual, nodding head or saying, "um hm?" or "go on" are included.
		3.*	ACCEPTS OR USES IDEAS OF STUDENT: clarifying, building, or developing ideas suggested by a student. As a teacher brings more of his own ideas into play, shift to category five.
		4.*	ASKS QUESTIONS: asking a question about content or procedure with the intent that a student answer.
	DIRECT INFLUENCE	5.*	LECTURING: giving facts or opinions about content or procedure; expressing his own ideas, asking rhetorical questions.
		6.*	GIVING DIRECTIONS: directions, commands, or orders to which a student is expected to comply.
		7.*	CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change student behavior from nonacceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.
STUDENT TALK		8.*	STUDENT TALK--RESPONSE: a student makes a predictable response to teacher. Teacher initiates the contact or solicits student statement and sets limits to what the student says.
		9.*	STUDENT TALK--INITIATION: talk by students which they initiate. Unpredictable statements in response to teacher. Shift from 8 to 9 as student introduces own ideas.
		10.*	SILENCE OR CONFUSION: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

GROUND RULES FOR IA CODING

Rule No. 1

When not certain to which of two or more categories a statement belongs, choose the category that is numerically farthest from Category 5. This is advisable except when one of the two categories in doubt is category 10, which is never chosen if there is an alternate category under consideration.

Rule No. 2

If the primary tone of the teacher's behavior has been consistently direct or consistently indirect, do not shift into the opposite classification unless a clear indication of shift is given by the teacher. The trained observer who is observing a particular action is in the best position to judge whether or not the teacher is restricting or expanding the freedom of action of class members.

Rule No. 3

The observer must not be concerned with his own biases or with the teacher's intent. Rather, he must ask himself the question, "What does this behavior mean to the pupils so far as restriction or expansion of their freedom is concerned?"

Rule No. 4

If more than one category occurs during the three-second interval, then all categories used in that interval are recorded; thus, record each change in category. If no change occurs within three seconds, repeat the previous category number.

Rule No. 5

Directions (Category 6) are statements that result (or are expected to result) in observable behavior of children. Examples of direction are: "Go to the board, read Question 3, go to your seat, etc." Some teacher statements sound like directions, but will not be followed by observed student compliance. These statements often precede the actual direction. For example, "Let's get ready now to go to recess (orientation a 5), now, Row 5, get your coats."

Rule No. 6

When the teacher calls on a child by name, the observer ordinarily records a 4 or part of the question in the three second interval.

Rule No. 7

If there is a discernible period of silence (at least 3 seconds), record one 10 for every three seconds of silence, laughter, board work, etc.

Rule No. 8

When the teacher repeats a student answer, and the answer is a correct answer, this is recorded a 2. This tells the student he has the right answer and therefore functions as praise.

Rule No. 9

When the teacher repeats a student idea and communicates only that the ideas will be considered or accepted as something to be discussed, a 3 is used.

Rule No. 10

If a student begins talking after another student (without the teacher's talking), a 10 is inserted between the 9's or 8's to indicate the change of student.

Rule No. 11

Statements such as "uh, uh, yes, yea, all right, okay," which occur between two 9's, are recorded as 2 (encouragement). These statements function as encouragement (the student continues talking after the 2) and are therefore classified as 2.

Rule No. 12

A teacher joke, which is not made at the expense of the children, is a 2. If the joke makes fun of a child, then it is coded as a 7.

Rule No. 13

Rhetorical questions are not really questions; they are merely part of lecturing techniques and should be categorized as 5's.

Rule No. 14

A narrow question is a signal to expect an 8. If the student gives a specific predictable answer, this is an 8. If the child expands documents, or justifies his answer, the observer should begin tallying 9's.

Rule No. 15

When the class members respond to a question or direction in unison with a single discernible response, an 8 rather than a 10 is recorded.

Rule No. 16

Do not code verbal tics --- good, fine --- as praise (category 2) unless they are perceived by students as same.

Rule No. 17

Yes and no teachers responses are coded in Category 5.

Rule No. 18

Teacher repetition after a student's request is coded in category 6.

Rule No. 19

Student chorus responses are coded in category 8 and indicated as 8+.

Rule No. 20

Yes and no student responses are coded in category 8.

Rule No. 21

Keep margin notes if at all possible.

2

IA CODING SHEET

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IA CODE MATCHING TALLY
OBJECTIVITY CHECK

An Estimate of the Accuracy (Objectivity) of Human Judgment in Nominal Category Coding

A. Two judge case.

Two people independently study a series of items, (observed events, documents, verbal or written statements, etc.) and categorize each item according to a set of prearranged categories. This example is based on a ten category system. While constant in this example, the number of categories may be different in other examples. The results were:

Item Number	Assigned Code Number Coder X	Assigned Code Number Coder Y	Item Number	Assigned Code Number Coder X	Assigned Code Number Coder Y
1	8	8	17	8	4
2	8	4	18	3	4
3	4	4	19	5	5
4	6	8	20	8	8
5	4	4	21	4	10
6	3	3	22	4	4
7	4	4	23	4	4
8	8	8	24	5	5
9	6	6	25	3	3
10	5	5	26	6	8
11	4	4	27	10	10
12	8	8	28	4	5
13	6	4	29	5	5
14	4	4	30	4	4
15	4	4	31	8	6
16	8	8	32	9	8
			33	4	5

What is the best estimate of the accuracy of coders X and Y, based on these data?

Theory

Accuracy, using the notations P_x and P_y, is defined as the probability that the coder will correctly code a given item. Accuracy is assumed to be constant. The estimate is derived from the ratio (percent) of agreement between X and Y, using the notation a or $a_{x,y}$

$$A_{xy} = \frac{\text{Number of agreements}}{\text{Number of items}}$$

Assuming $P_x = P_y = P,^*$

$$p = \sqrt{a}$$

Solution

$$A_{xy} = \frac{22}{33} = .6667$$

$$p = \sqrt{.6667} = .817$$

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* "An Estimate of the Accuracy (Objectivity) of Nominal Category Coding" Allen L. Bernstein, MOREL Monograph Number 1, Nov. 1968. (Michigan-Ohio Regional Educational Laboratory).

B. Three judge case.

Three people independently study a series of items (observed events, documents, verbal or written statements, etc.) and categorize each item according to a set of prearranged categories. This example is based on a ten category system. While constant in this example, the number of categories may be different in other examples. The results were:

Item Number	Assigned Code Number			Item Number	Assigned Code Number		
	Coder: X	Y	Z		Coder: X	Y	Z
1	8	8	8	18	3	4	4
2	8	4	6	19	5	5	5
3	4	4	8	20	8	8	8
4	6	8	6	21	4	10	4
5	4	4	6	22	4	4	4
6	3	3	3	23	4	4	4
7	4	4	10	24	5	5	5
8	8	8	8	25	3	3	5
9	6	6	6	26	6	8	6
10	5	5	5	27	10	10	8
11	4	4	4	28	4	5	8
12	8	8	8	29	5	5	5
13	6	4	6	30	4	4	4
14	4	4	4	31	8	6	8
15	4	4	4	32	9	8	8
16	8	8	5	33	4	5	4
17	8	4	8	34	*	9	9

*Missing

What is the best estimate of the accuracy of coders X, Y and Z based on these data?

Theory	Solution
Accuracy using the notations P_x, P_y and P_z is defined as the probability that the coder will correctly code a given item. Accuracy is assumed to be constant. The estimates are derived from the ratios (percents) of agreement.	
A_{xy} = agreement between X and Y B_{xz} = agreement between X and Z C_{yz} = agreement between Y and Z.	
In each case ration of agreement = $\frac{\text{Number of agreements}}{\text{Number of items}}$	$A_{xy} = \frac{22}{33} = .6667$ $B_{xz} = \frac{23}{33} = .6970$ $C_{yz} = \frac{19}{34} = .5588$
$P_x = \sqrt{\frac{ab}{c}}$	$P_x = \sqrt{\frac{(.6667)\ (.6970)}{.5588}} = .9118$
$P_y = \sqrt{\frac{ac}{b}}$	$P_y = \sqrt{\frac{(.6667)\ (.5588)}{.6970}} = .7311$
$P_z = \sqrt{\frac{bc}{a}}$	$P_z = \sqrt{\frac{(.6970)\ (.5588)}{.6667}} = .7643$

Theory	Solution
We define m as the ratio (percent) of correctness, based on the criterion that an item is considered correct if any two of the three coders, or all three agree on a code for that item.	
$m = \frac{\text{Number correct}}{\text{Number of items}}$	$m = \frac{31}{33} = .9394$ (Note: Item 34 is not counted because of missing data).
m can be predicted from P_x, P_y and P_z	
with $Q_z = P_x$ $Q_y \quad P_y$ $Q_z \quad P_z$	$Q_x = 1 - .9118 = .0882$ $Q_y = 1 - .7311 = .2689$ $Q_z = 1 - .7643 = .2357$
by $m^* = P_xP_yP_z + P_xP_yQ_z + P_xQ_yP_z + Q_xP_yP_z$	$m = (.9118)(.7311)(.7643) + (.9118)(.7311)(.2357) + (.9118)(.2689)(.7643) + (.0882)(.7311)(.7643)$ $= .5095 + .1571 + .1874 + .0493$ $= .9033$

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* The prediction for m compares favorably with the observed m of .9394.

The theoretical rationale of the model is discussed in "An Estimate of the Accuracy (Objectivity) of Nominal Category Coding" Allen L. Bernstein, MOREL Monograph Number 1, Nov. 1968. (Michigan-Ohio Regional Educational Laboratory).

MICRO-TEACHING TRAINING

Seeing yourself as others see you is an invigorating--sometimes a shocking--experience which can stimulate one's desire to change. MTT not only holds up a mirror to the teacher but provides an opportunity to practive new patterns of behavior in brief, simulated episodes. Dwight Allen and his colleagues at Stanford have been experimenting with various training designs while working with college students in an intern program of teacher preparation. An illustration of micro-teaching as an in-service training technique is given below.

Procedural Description. A single cycle consists of a planning phase of from five to ten minutes, a teaching phase of five minutes, and a five to ten minute evaluation period, to include time for replanning the same micro-lesson or planning the next episode. During phase two, the five minutes of teaching is conducted with three to five pupils who come from a pool which is large enough so that fresh pupils can participate in each successive episode for the same trainee. The teaching is sound tape and video tape recorded for playback in phase three. Allen has shown other methods by thus condensing the elapsed time for planning, teaching, and evaluating.

An experienced teacher who has participated in SSST exercises on open and closed questions may now wish to test these notions while working with youngsters on a substantive teaching objective. A plan is made to vary the degree of openness of questions while the teacher attempts to identify issues which will guide a unit of study of the United Nations. The lesson is then taught and recorded and the next five minutes is devoted to a playback. Allen[7] has concluded that preferably one and at the most two suggestions for change can be made by the MTT supervisor. Whether this will prove equally true with the embellished application MOREL proposes to make remains to be seen.

In the MOREL adaptation, systematic coding of behavior will occur simultaneously with magnetic recording. If the display of coded data can be ready at the instant the teaching stops and is plotted along a five minute time line, then it may be possible to sharpen the evaluation by concentrating on selected transition moments during the micro-teaching. In such an adaptation, the coding procedures will have been learned in the SSST exercises, and, incidentally, will be consistent with the coding procedures to be described in the next section).

A second adaptation might be to involve another teacher in the coding function and several teachers in the evaluation function although the experiences reported by Allen suggest that a single trained consultant would be sufficient for the evaluation.

Given several teachers undergoing training and a reasonably large pool of pupils, the video tape equipment can be kept busy continuously although used only for the teaching and evaluation phases. Two teachers can complete at least four cycles in two hours, if care is taken in scheduling.

The Objectives of MTT. When MTT is part of a training program in which SSST exercises come first, it would seem possible to develop a curriculum of self-development. For example, a teacher might work several weeks with the improvement of questions, devote another period to teacher responses.

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[7] Allen, Dwight. Micro-Teaching: A Description. Palo Alto: Stanford School of Education, 1966.

and then move on to more complex sequences.

In each case, MTT experiences would provide teachers with a quasi teaching setting in which certain patterns of behavior could be tried out in a change environment that includes frequent feedback. Certain irrelevant concerns which are a part of the total class setting are either reduced or eliminated. Most of the trainee's energy can be concentrated on his own behavior patterns, in the discovery of teaching strategies, and in achieving self-insight with regard to unique, individual style.

Documentation and Evaluation of MTT. The most complete report of MTT effectiveness yet published can be found in a series of papers written by members of the Stanford[8] training staff. Some of their conclusions are listed below.

A combination of supervisory and pupil ratings, made after each teaching phase, does correlate positively with measures of subsequent teaching performance in the classroom. Video tapes taken during micro-teaching which show only the teacher cannot be accurately distinguished from similar tapes taken of the same individual in front of a full-sized class. About thirty hours of micro-teaching is said to be more effective than a full one semester assignment of traditional student teaching.

There are several persons in the Michigan-Ohio area who have had direct experience with supervising MTT. These resources will be of great help to MOREL. Among such resource people are Emily Girault, University of Michigan, and Charles Galloway and Ted Cypert, The Ohio State University.

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[8] _Ibid._

MICRO-TEACHING: A NEW FRAMEWORK FOR IN-SERVICE EDUCATION

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A young science teacher entered her micro-teaching class carrying a live snake. The purpose of her lesson was to identify characteristics common to snakes and not to other animals. As a result of her dramatic entrance, involvement was immediate and sustained throughout the five-minute lesson. At the end of the lesson, no one could doubt that this was real, not laboratory teaching.

The teacher was evaluated and rated by the students and supervisors in accordance with the Stanford Appraisal Guide. Her ratings were generally quite high, with the execption of "pacing the lesson." Immediate feedback indicated that this otherwise effective teacher talked too fast and covered too much information through the lecturing technique. It was suggested that she limit the information to three or four major characteristics which distinguish snakes from other types of animals, and refocus in order to provide for student summary and more effective closure.

With immediate information as to suggested improvement, the teacher then re-taught the same lesson dealing with snakes. On subsequent re-teach, the teacher, students, and supervisors felt the lesson indicated definite improvement. All agreed that the material was probed in greater depth, and the material was more lucid in organization.

This teaching situation occurred as part of a seminar series for in-service training of supervisors at the Campbell Union High School District in California. The purpose of the series was to change teacher perceptions of their own teaching behavior, and to provide training for specific teaching skills. Teachers and supervisors were given only a cursory amount of training and initial application, yet supervisors were able to get differences in teaching behavior. The training seminars demonstrated that micro-teaching can be of real value to experienced personnel.

The micro-teaching structure is a scaled-down teaching encounter in class size and class time which has been developed in the Stanford University Secondary Teacher Education Program. Class size is limited to one to five students and class time from five to twenty minute lessons. Micro-teaching may be used with or without video-tape.

While micro-teaching was first developed for preliminary experience and practice in teaching and as a research vehicle to explore training effects under controlled conditions, the concept can be of service to experienced teachers as a means of gaining new information about their teaching in a relatively short time, and as a means of changing teacher perceptions of their own teaching behavior. Realistic approximations to classroom conditions allow predictions of subsequent classroom teaching to be made with a high degree of accuracy, for the students are reacting and evaluating as real students, not role-playing. This constitutes a real teaching encounter, not one which is simulated; only it is reduced in terms of students and time.

Micro-teaching may therefore serve a dual purpose; it may be utilized in a diagnostic sense to ascertain specific problems in presenting curriculum, and it may be used in an evaluative sense to rate total performance through the use of immediate student feedback. Previous experiments have shown that student ratings of teacher performance are more stable than other types of evaluation.

Experienced teachers may gain new insights through adaptation of the micro-teaching model. Under the present framework, if a teacher wished to try a new approach in a particular lesson, he must wait until the following year to test alternatives to that lesson. In micro-teaching, the teacher can experiment with several alternatives with a limited number of students each time, with the opportunity for immediate evaluation and additional trials. Following this limited application, the plan can then be presented to the classroom. In this way, teachers may experiment with new methods and new content without the risk of defeating student learning and with much more satisfactory timing.

The micro-teaching clinic is an effective stimulus for the improvement of teacher performance after a performance plateau is reached in early tenure. The most effective teachers attain a high level of performance early in their careers. Unfortunately they rarely have the stimulus to further increase their competence. Providing them with an opportunity to try new ideas easily and without risk to student learning can be an important asset to professional development.

The following uses of micro-teaching are among those appropriate for in-service situations:

1. The teach-reteach pattern.

By using a teach-reteach model, a teacher can use the experience of teaching a lesson to an initial group of students to make changes which can be immediately incorporated and taught to a different group of students for comparative evaluation. The scaled-down nature of the micro lesson makes such repetitions feasible and economical. By using the teach-reteach pattern, specific teaching skills can better be evaluated; content can be tested with one teacher practicing a new lesson while the rest of the department uses this lesson as a basis for critique and suggested alternatives. On the reteach, the experienced teacher can test new ideas and methods determined by student reaction and departmental suggestions thereby improving both the quality of content and mode of presentation.

2. Micro-Teaching as a trial framework for team presentations.

Groups of teachers can experiment together with new techniques in content or mode or presentation. Several teachers from a given department could teach while the rest of the department uses their presentation for purposes of evaluation. Perhaps several departments might expand this experiment as a means for developing interdisciplinary curriculums.

3. Micro-Teaching as a site for trial of instructional level.

It is often difficult to predict the instructional level of materials. Even the most experienced teacher can make serious misjudgments about student experience or maturity required to learn a given set of materials. In some instances this will require the alteration of the lesson materials. In other circumstances the lesson can be taught at another level as indicated. In Jefferson County, Colorado, a lesson was developed for fifth and sixth-grade students in science. In a trial of this lesson in a micro-teaching situation, it was discovered that second-grade students caught on to this lesson faster than did older students. Micro-teaching provides good opportunity for such quick comparisons. Obviously, there remained many questions as to why and under what circumstances the results would have differed. These questions could also be tested quickly in the micro-teaching structure where immediate feedback is available and the conditions could be altered easily as desired.

4. Micro-Teaching for pre-employment prediction.

Micro-teaching can serve as a framework for selection or rating experienced teachers seeking employment. An evaluation committee could rate the teacher under "live" conditions instead of relying solely on recommendations or grade-point average. This concept can be extended to include evaluation of current employees for possible promotion. Under the present system, teachers are observed once or twice a year, given a rating form or written recommendation which signifies the teacher's competence. With the use of micro-teaching, teachers can be observed frequently for brief durations of time, under controlled conditions. With micro-teaching as a source of evaluative evidence, new criteria for employment performance can be developed. For example, it might be more noteworthy to judge how much a potential teacher will be able to improve as a result of inservice supervision than to assess current performance. Also as we learn to differentiate teaching roles, micro-teaching situations can be devised to provide practice and evaluation of specific competences.

A recent experiment for pre-employment prediction was carried out jointly by Standford University and the Fremeont Union High School District in California. Teachers seeking employment with the Fremont District taught a micro-lesson. Two methods for selection were then used; Fremont selected teachers using traditional means, while Stanford University predicted teaching success based solely on micro-teaching evaluation. The results of this experiment will be available in the fall after Stanford and Fremont correlate their selections and predictions. Those teachers chosen by Fremont will be checked against their ratings in micro-teaching, and both predictions will be evaluated by teaching success during the year. It is not anticipated that micro-teaching can replace other employment screening entirely, but the present experiment can provide evidence as to possible directions for further exploration.

5. Micro-teaching to train supervisors

By focusing on specific techniques desired for experienced teachers, supervisors can identify the necessary variables in training teachers to improve their teaching behavior. The beginning teacher, for example, is observed usually one full class period followed by a teacher conference. The new teacher receives a list of suggested changes, but the supervisor has no way to test the results of the conference since there is typically no effort to evaluate the application of supervisory suggestions until months later, with different conditions in student reaction, materials, or grade level. No one ever knows the results of supervision.

With micro-teaching, a beginning teacher is observed for a brief lesson followed by a conference followed by another observation. During the conference, the trainee must absorb both the students' and the supervisor's suggestions for improvement. During the re-teach, the supervisor can immediately evaluate progress and understanding on the part of the teacher. All instruction and evaluation occurs within a relatively short period. Experiments have indicated that a teacher should not be given more than one or two specific points to concern himself with during any one supervisory sequence.

There are many facets of supervision that can be studied, using the micro-model: testing and looking at alternatives for supervision; varying the time and length of visits; letting teachers select the time for supervision; experimenting with the concept that the quality of supervision improves with a reduction in the number of conference suggestions; experimenting with or without video-tape; studying and enumerating the skills of teaching (identifying specific training protocols); using new materials; distinguishing between behavioral objectives and pious hopes; improving the ability to diagnose and state behavioral objectives; and developing instructional techniques.

6. Micro-teaching for continuing the supervision and evaluation of beginning teachers.

This model lends itself to intensive supervision, immediate critique, and opportunities to repeat the practice session if necessary. Micro-teaching simplifies the complexities of teaching by isolating specific variables in the total teaching act which can be identified and therefore manipulated. It also provides greater control over practice in a wide range of teaching situations, in a variety of pupil types and class compositions and in the possbile variation in amount of practice according to individual needs. Micro-teaching increases the economy of supervision by increasing the amount of practice possible within a limited period of time, requiring fewer facilities and pupils. It also anticipated new alternatives in evaluation by providing good records of teaching performance at periodic intervals under standard conditions and permitting several judges to evaluate and re-evaluate a single performance.

The micro-teaching model can be adapted to different grade, ability, and interest levels. This is especially important at the junior and senior high school level. Individual adaptations would vary from school to school, depending upon local needs.

Initiating and maintaining a micro-teaching clinic serving local needs takes few facilities and funds.

Micro-teaching can facilitate curriculum planning. If the committee is working during the summer, then the micro-classes should be utilized during the summer. Students could be hired and paid out of regular district funds as part of the cost of curriculum development. This would provide pre-class trials of materials with the opportunity for trying and testing many alternatives.

If the curriculum committee is working on planning development during the regular school year, then micro-teaching should be used a few days before a teacher would normally be teaching the lesson. This would be particularly useful for evaluation in team-teaching situations. Teachers could use their own students for evaluation purposes, but on each occasion, teachers should select different students from their classes for trial runs. This provides the necessary random sampling and does not unduly affect the learning of any one student. Great variety is possible with only a few students.

During the summer of 1965, Stanford University has continued experimenting with the micro-teaching model as a method for training beginning teachers. For 140 pre-service teachers, the total number of students required was 42. Ten different student teams composed of four students each were used (with two reserves) and this combination gave great variety for each teacher.

The micro-teaching model can be used as a part of teacher workshops. The model can be adapted at any time during the workshops; on Saturdays, during the summer, or during the regular school year. Students could be selected on a voluntary basis or hired. The important thing to remember is that adaptation of micro-teaching does not take many students or complex logistics.

A recent interview with experienced personnel from Jefferson County, Colorado, indicated that micro-teaching during summer workshops for in-service teachers is particularly valuable. New ideas and methods were tested within the micro-framework. The model was also successfully used on parents' night as means of explaining to parents new ideas and curriculum to be presented during the summer.

During the summer, the problem is to select a representative student population for which the materials are ultimately being developed. Experiments to date have shown that there is no difficulty employing the students; they are eager to participate. Funds can be drawn from the curriculum planning budget. Proportionately, the amount of financial resources needed is not high.

Training of micro-teaching students is minimal, since training is limited to teaching the students how to use the evaluation instruments. Two types of instruments have been used in Stanford's experimentation; a general rating form (the Stanford Teacher Competence Appraisal Guide), and specific forms developed to reflect specific skills. The latter instruments are designed by the staff responsible for the training so that the desired responses are accounted for selectively.

The structure of the micro-teaching clinic will depend on the focus and purposes of the experimentation; that is, the structure will be different if the focus in on staff training rather than on materials. If the focus is on staff training, then the students should use narrow and specifically designed rating instruments to measure staff variables. If the focus in on materials, evaluative instruments would have to reflect the training focus.

The micro-teaching clinic can be structured so that it focuses upon teaching competences where the students' point of view is most relevant. This would include student reaction to beginning the lesson (establishing set), establishing appropriate frames of reference, increasing student participation, using questions effectively, recognizing and obtaining attending behavior, control of participation, providing feedback, setting a model, employing reinforcement, effectively giving directions, and ending the lesson (achieving closure).

Micro-teaching successfully facilitates maximum flexibility in learning how to use new curriculum, in learning how to evaluate curriculum and performance, and as a selection and prediction device. Micro-teaching lends itself well to experimentation with practice and evaluation of several techniques: the teach-reteach pattern offers the opportunity for immediate student reaction and feedback; team presentations can be tested on a limited scale before postulation to the class; the model can be adapted at different grade levels; a micro-teaching situation can provide information for determining the level where a lesson might be developed for supervisors; continued supervision and evaluation of beginning teachers can be increased.

Micro-teaching offers the opportunity for new insights and perceptions of teaching behavior in presentation and evaluation techniques. The model can be adapted to local needs in testing both immediate add long-range goals in curriculum planning. Micro-teaching holds a kaleidioscope of opportunities for rethinking the basis of inservice education.

GIVEN A LIST OF 15 QUESTIONS ON THE WRITING OF BEHAVIORAL OBJECTIVES, THE LEARNER WILL BE ABLE TO ANSWER NO LESS THAN 13 OF THESE QUESTIONS AT THE CONCLUSION OF THIS PRESENTATION.

SOME ADVANTAGES TO BEHAVIORAL OBJECTIVES

1. APPROPRIATE EVALUATION PROCEDURES CAN BE SELECTED.
2. SUITABLE LEARNING ACTIVITIES CAN BE SELECTED TO MEET THE CRITERIA OF THE BEHAVIORAL OBJECTIVE.
3. SPECIFICITY ALLOWS ONE TO EVALUATE WHETHER HE IS FOLLOWING THE PROPER COURSE.
4. STUDENTS CAN FOCUS THEIR ENERGIES TOWARD RELEVANT TASKS.
5. TEACHERS CAN CHART THEIR OWN INSTRUCTIONAL GOALS.
6. MODIFICATION OF THE LEARNING ACTIVITIES TO MEET THE OBJECTIVE WHEN STUDENTS FAIL TO BEHAVE IN TERMS OF THAT OBJECTIVE.

COURSE DISTINCTIONS

PREREQUISITIES:
WHAT A LEARNER HAS TO BE ABLE TO
DO TO QUALIFY FOR A COURSE.

DESCRIPTION:
WHAT THE

OBJECTIVES :
WHAT A SUCCESSFUL LEARNER IS ABLE
TO DO AT THE END OF THECOURSE.

EXAMPLES:

1. IN ORDER TO TAKE AMERICAN HISTORY 2 YOU MUST HAVE COMPLETED AMERICAN HISTORY 1.

2. THIS COURSE WILL LOOK AT AMERICAN HISTORY FROM 1865 TO THE PRESENT. THE TEXT FOR THE COURSE IS THE "HISTORY OF THE UNITED STATES".

3. GIVEN A LIST OF FIFTEEN QUESTIONS THE FAU MEMBERS WILL BE ABLE TO ANSWER 13 OUT OF THE FIFTEEN AT THE CONCLUSION OF THIS PRESENTATION.

WORD INTERPRETATIONS

WORDS OF MANY INTERPRETATIONS:

TO KNOW
TO SEE
TO UNDERSTAND
TO REALIZE
TO APPRECIATE
TO GRASP THE SIGNIFICANCE OF
TO ENJOY
TO BELIEVE
TO RECOGNIZE
TO HAVE FAITH IN
TO FULLY SENSE

WORDS OF FEWER INTERPRETATIONS:

TO SPEAK
TO WRITE
TO RECITE
TO LIST
TO COMPARE
TO CONTRAST
TO CONSTRUCT
TO MAKE
TO DISPLAY
TO LIST
TO SOLVE
TO DIFFERENTIATE

DIRECTIONS: ADD TO THE ABOVE LIST!

DEFINITIONS OF IMPORTANT TERMS

BEHAVIOR: ANY VISIBLE ACTIVITY BY A LEARNER

TERMINAL BEHAVIOR: REFERS TO THE BEHAVIOR YOU WOULD LIKE YOUR LEARNER TO BE ABLE TO DEMONSTRATE AT THE TIME YOUR INFLUENCE OVER HIM ENDS

CRITERION: IS A STANDARD OR TEST BY WHICH TERMINAL BEHAVIOR IS EVALUATED

EXAMPLES:

1. TO SOLVE
2. TO SOLVE A STORY PROBLEM AT THE CONCLUSION OF A ONE WEEK UNIT ON STORY PROBLEMS
3. GIVEN A LIST OF TWENTY STORY PROBLEMS A STUDENT WILLBE ABLE TO SOLVE 90% OF THE PROBLEMS CORRECTLY

THE SCHEME FOR CONSTRUCTION OF BEHAVIORAL OBJECTIVES:

1) IDENTIFY THE TERMINAL BEHAVIOR BY NAME: EVIDENCE THAT THE LEARNER HAS ACHIEVED THE OBJECTIVE.

2) TRY TO DEFINE THE DESIRED BEHAVIOR FURTHER BY DESCRIBING THE IMPORTANT CONDITIONS UNDER WHICH THE BEHAVIOR WILL BE EXPECTED TO OCCUR.

3) SPECIFY THE CRITERIA OF ACCEPTABLE PERFORMANCE BY DESCRIBING HOW WELL THE LEARNER MUST PERFORM TO BE CONSIDERED ACCEPTABLE.

DIRECTIONS : USE BEHAVIORAL OBJECTIVE OF THE LESSON ON TEACHING BEHAVIORAL OBJECTIVES.

QUESTIONS TO ASK TO DETERMINE THE CONDITIONS UNDER WHICH THE TERMINAL BEHAVIOR WILL DEVELOP

1. WHAT WILL THE LEARNER BE PROVIDED?

2. WHAT WILL THE LEARNER BE DENIED?

3. ARE THERE ANY SKILLS THAT YOU ARE SPECIFICALLY NOT TRYING TO DEVELOP?

EXAMPLES

1) TO CONSTRUCT RADIOS

2) TO WRITE A POLITICAL SURVEY

3) DIRECTIONS: PLEASE CONSTRUCT THE CONDITIONS FOR THESE TERMINAL BEHAVIORS.

IMPORTANT ASPECTS OF BEHAVIORAL OBJECTIVES

1. A BEHAVIORAL OBJECTIVE TELLS WHAT A LEARNER IS TO BE LIKE.

2. A MEANINGFULLY STATED BEHAVIORAL OBJECTIVE IS ONE THAT SUCCEEDS IN COMMUNICATING YOUR INTENT.

3. THE BEST STATEMENT EXCLUDES THE GREATEST NUMBER OF POSSIBLE ALTERNATIVES TO YOUR GOAL.

4. CAN ANOTHER COMPETENT PERSON SELECT SUCCESSFUL LEARNERS IN TERMS OF THE BEHAVIORAL OBJECTIVE SO THAT YOU, THE OBJECTIVE WRITER CONCUR WITH THE SELECTION?

5. ANOTHER WAY OF DESCRIBING BEHAVIORAL OBJECTIVES WOULD BE BY CALLING THEM PERFORMANCE OBJECTIVES.

6. THE BEHAVIORAL OBJECTIVE THAT IS MOST USEFULLY STATED IS THE ONE THAT BEST COMMUNICATES THE INSTRUCTIONAL INTENT OF THE PERSON SELECTING THE BEHAVIORAL OBJECTIVE.

7. THE BEHAVIORAL OBJECTIVE MUST BE STATED IN TERMS THAT INCLUDES TEST SITUATIONS YOU INTEND TO USE AND EXCLUDES IRRELEVANT TEST SITUATIONS. CONSEQUENTLY, THE BEHAVIORAL OBJECTIVE IS STATED IN A CLEAR ENOUGH MANNER TO COMMUNICATE YOUR INTENT.

8. IF YOU GIVE EACH LEARNER A COPY OF YOUR BEHAVIORAL OBJECTIVES YOU MAY NOT HAVE TO DO MUCH MORE.

BEHAVIORAL OBJECTIVES QUIZ

1. DECIDE WHETHER THE STATEMENT IS STATED BEHAVIORALLY BY PLACING " YES OR NO" IN FRONT OF THE STATEMENT.

   1. TO REALLY UNDERSTAND THE LAWS OF PROBABILITY.
   2. TO KNOW THE NUMBERS OF THE DETROIT TIGER PLAYERS.
   3. TO BE ABLE TO WRITE FIVE EXAMPLES OF MYSTERY PLOTS.

II. DETERMINE WHETHER THESE STATEMENTS ARE TRUE OR FALSE BY PLACING A "T" OR "F" IN FRONT OF THE NUMBER.

   1. BEHAVIORAL OBJECTIVES MUST CONTAIN CONDITIONS.
   2. BEHAVIORAL OBJECTIVES MUST CONTAIN TERMINAL BEHAVIOR EXAMPLES.
   3. BEHAVIORAL OBJECTIVES MUST HAVE CRITERION FOR SUCCESS.
   4. "TO BECOME AWARE OF" IS A GOOD EXPRESSION TO USE IN STATING OBJECTIVES IN BEHAVIORAL TERMS.

III. COMPOSE FIVE DIFFERENT OBJECTIVES CONCERNING FIVE DIFFERENT TOPICS. REMEMBER THAT A WELL CONSTRUCTED BEHAVIORAL OBJECTIVE CONTAINS:

1. THE BEHAVIOR DESIRED
2. THE CONDITIONS
3. THE CRITERIA OF SUCCESS

IV. WHAT ARE THREE ADVANTAGES OF WRITING INSTRUCTIONAL OBJECTIVES BEHAVIORALLY?

A SET OF PERFORMANCE VERBS TO USE WITH ALL BEHAVIORAL OBJECTIVES

AGREE UPON ONE PERFORMANCE VERB TO DESCRIBE THE SAME ACTION

PERFORMANCE VERB	BEHAVIORAL SYNONYM(S)	DEFINITION FOR USE
1. Identify	Choose, select, pick-up point out, touch	Learner makes a selection or separation of one from a group
2. Order	Arrange	Learner ranks according to a certain characteristic(s)
3. Name	Say, state, write (non-verbal)	Learner tells what it is called
4. Demonstrate	Show	Learner is called upon to go through some sort of procedure
5. Describe		Learner identifies and names a series of characteristics that a second learner can do the same from the first learner's explanation
6. Construct	Make, compile, assemble	Learner creates a product
7. State a Rule	Establish law, formula, principal	Learner states accepted standards that are applied to constructing an explanation
8. Apply the Rule		Learner uses the rule effectively
9. Distinguish	Discriminate	Learner identifies differences

EXAMPLES OF EACH PERFORMANCE VERB CATEGORY

IDENTIFY	"What shape is this block?" After a learner is presented a cube
NAME	"What color is the block?"
ORDER	"Arrange the blocks from the one that is smallest to the one that is largest."
DEMONSTRATE	"Take three large steps backward." "Point up." "Move your left foot forward."
DESCRIBE	"Tell Donald how to assemble this dinosaur skelton. You may only talk to him."
CONSTRUCT	"Draw a picture in the same shape as the arrangement of these objects." Place four markers in the shape of a square.
STATE A RULE	"When is the action verb demonstrate used in a behavioral objective?"
APPLY A RULE	"The length of a room is 15 feet and the width is 10 feet. What is the area of carpeting needed to cover the floor?"
DISTINGUISH	"Tell the difference between the following two materials: burlap and velvet." After blindfolding a learner

BEHAVIORAL OBJECTIVE PRESENTATION OUTLINE

I. Behavioral Objective of the Presentation

  A. Given a list of 15 questions on the writing of behavioral objectives, the learner will be able to answer no less than 13 of these questions at the conclusion of this presentation.

II. Who Has Heard Anything About Behavioral Objectives?

III. Why Behavioral Objectives (rhetorical)

  A. End up someplace and not know it

  B. Not being sure where you were going in the first place

  C. Carefully describe the intended outcome wanted

IV. Overlay #1 "Advantages of Behavioral Objectives"

  A. Interaction Analysis

  B. Micro-teaching

V. Overlay #2 "Course Distinctions"

  A. Examples

  B. Ask Questions

VI. Overlay #3 "Word Interpretations"

  A. Add to list (use grease pencil)

  B. Limiting of action verbs

VII. Overlay #4 "Definition of Important Terms"

VIII. Overlay #5 "Construction of Behavioral Objectives"

  A. Limit to a few words

IX. Terminal Behavioral

  A. Use of Examples

    1. "To enjoy baseball"

    2. "To construct a rocket"

X. Overlay #7 "Conditions"

   A. Challenge for conditions

   B. The given

XI. Criterion

   A. The minimum acceptable performance

      1. Examples

         a. time
         b. amount of answers
         c. capability in some way
         d. naming
         e. think of others

XII. Behavioral Objective of Presentattion

   A. Break down into

      1. Terminal behavior

      2. Conditions

      3. Criterion

XIII. Overlay #8 "Important Aspects of Behavioral Objectives"

   A. The groups read silently and question

XIV. Let's Write some

   A. Group Challenge

      1. When are behavioral objectives useful

XV. Quiz

How to Write Behavioral Objectives

William C. Farlow

In his book, Preparing Instructional Objectives, Robert Mager tells an interesting little fable with the moral that if you're not sure where you're going you might end up someplace else. I would like to give a couple of paraphrases. If you're not sure where you're going you can miss it by almost any road you wish to take. Also, if you're not sure where you're going you'll never know when you get there.

To my way of thinking of things this illustrates much of what happens in education. We spend a great deal of time talking about the objectives of the classes we teach but very little time or effort actually describing those objectives in ways that tell us how we will know when we have reached them.

The purpose of this paper is to try and help you begin to formulate your teaching objectives in ways that will let you know when you have reached them. Notice that I did not say that this was the objective of the paper. I'll come back to that later.

It seems fairly obvious that the easiest way to determine if an event is happening is to observe it if observation is possible. The trick is to design events so that they must be observable. Observable events among human beings--in which group students are more or less roughly located--are called behaviors. Teaching objectives which result in observable events then would be called behavioral objectives.

Let's do a little review of these simple ideas and see of we are together. Which of the following would be an event that could be easily observed?

1. A student eating a sandwich
2. A student enjoying the flavor of his sandwich

If you selected #1 as your answer turn to page 2. If you selected #2 as your answer turn to page 3.

A student eating a sandwich is an event that is easily observed. His manners may or may not be acceptable, but it is easy to observe whether he is eating. If you had as a teaching objective the task of teaching a student to eat a sandwich it would be easy to observe whether the objective had been met.

Now let's take a look at how we might express that objective so that it could be observed. Suppose our job was to teach a student to eat a sandwich. If we were to list as our objective "the student will understand how to eat a sandwich" or "understanding how to eat a sandwich", how could we determine whether such understanding has been learned? We might have him write an essay on the delights of eating a sandwich but could we be sure that he understood how to eat it? Unfortunately, "understanding" doesn't always result in a behavior that is easily observed.

If, on the other hand, we had said simply that as a result of our teaching "the student will eat a sandwich" it would be very easy to observe whether we had met that objective. The act of eating is much more easily observed than is understanding of how to eat. The same idea is true of other concepts which we might wish to teach.

If we were to follow this principle in stating our objectives in teaching, we would state the objectives in ways that would result in observable behaviors. For example, which of the following would be more likely to result in an observable behavior?

1. The student will understand the addition of whole numbers.
2. The student will demonstrate his ability to add whole numbers by working the problems given him by the teacher.

If your answer was #1 turn to page 4. If your answer is #2 turn to page 5.

Page 3

Well, let's take a look at what we wanted. I asked you to pick an event that could be easily observed. Your choice was "a student enjoying the flavor of his sandwich". It might be that you are right. If that sandwich really transported the student to heights of ectasy he would probably show it. On the other hand it's a little difficult for me to think of a sandwich being that good. My powers of observation aren't sufficiently reliable to permit me to be certain that I can tell whether a student is enjoying his sandwich under most circumstances, but I think I can observe whether he is eating it.

This matter of reliability of observation is an important element of stating behavioral objectives. The behavior should be so clearly stated that the average person can observe it. It should not be stated just for you. If you state your objectives with sufficient clarity your students will be able to use them to guide their study and any other teacher willbe able to use them if needed. And, let's face it, two weeks from now you might have a little difficulty reading your own objectives if they are not very clearly written.

Turn to page 2.

We need to take a look at some words like "understand, believe, know, appreciate, etc.". Such words have found their way into educational goals and objectives with such frequency that they have become accepted. But how does a student demonstrate understanding, knowledge, and appreciation?

What is a student doing when he "understands" the principles of bookkeeping? What is a student doing when he "develops an appreciation" of art? If you can state what he is doing then this statement of his actions would be a better statement of the objective because it is easily observed and evaluated.

In general, we will find it much easier to evaluate a student's work, and our own, if we formulate objectives that call for such things as:
will write, will list, will recite, will demonstrate, will show, will differentiate.

Turn to page 5.

Number 2 is correct answer since it requires the student to actually perform in a way that can be easily observed.

We have been talking rather loosely about teaching objectives and student objectives as if they are the same thnng. Actually the objective of teaching is to some how or other induce learning on the part of the student so we should be talking about student objectives. That is, we want the student to learn certain principles or laws or skills or facts.

Since the reason for teaching ought to be the stimulation of learning in the student it is probably better to state objectives in terms of the student. We will, then, state our objective in terms of what the student will be doing when he has learned what we want him to learn. Another way of saying about the same thing would be to list our objectives as student behavioral objectives. For example, at the beginning of this paper I stated that the purpose of the paper is to "try and help you begin to formulate your teaching objectives in ways that will let you know when you have reached them". If I followed the principles mentioned above, which of the following would be more correct?

1. The student will learn to state objectives in behavioral terms.
2. The student will state his objectives in terms of what his students will be doing when they have reached those objectives.

If your choice is #1 turn to page 6. If your choice is #2 turn to page 7.

You selected "the student will learn to state objectives in behavioral terms" as being the better choice. I hope that is what happens but I will be much more satisfied if the student not only learns how but actually does state his objectives in terms of what the student will be doing. You see, from my position, and from yours a little later, there is no way I can tell if you really have learned unless you perform. A phrase like "the student will learn---" sounds very good but close inspection reveals that is is meaningless until the student does something to demonstrate his learning. You and I should continually try to state our objectives in terms of what the student will be doing when he has learned what we wish him to learn.

Go to page 5 and select the other alternative.

Your choice is correct. Since I want you to state your objectives in terms of the appropriate student behaviors, I should state mine the same way, in terms of what you will be doing when you have learned what I want you to learn.

One of the factors of learning not frequently considered is that of the environment or conditions under which performance is expected. That is, we don't often consider the conditions the student will be operating or working in when we want him to exhibit his learning. It isn't enough to say that the student will operate a tape recorder correctly at the conclusion of the training program. We need to state the conditions under which he will operate the recorder. Do we expect him to stand on his head? Will he be blindfolded? Can we assure him that the recorder is in operable condition and all accessories are present? Will he have the same kind of recorder he was trained on?

Which of the following does the better job of stating the conditons of performance?

1. Given a reference of his choice the student will solve the following chemical equation" $H_2O + CO_2 =$
2. The student will solve simple equations

If you selected #1 go to page 8. If your selections is #2 go to page 9.

Yes, #1 is the better choice. However, there are other conditions that could have been stated and if you were bothered by the lack of some of these other conditions you are really on the ball.

Just how detailed should you be in stating the conditions of performance? Sufficiently detailed that you and your students will know exactly what you expect. You should let him know what you are going to require and under what circumstances and with what equipment he will perform, but it does no good to burden him with unnecessary limitations. For example, if your objective is to have the student ride a bicycle it is not necessary to state the make of bicycle or the pressure in the tires since the skill involved in riding a bicycle is equally applicable to almost any bicycle the student is likely to find and the tire pressure is not terribly important to his demonstration of ability.

Your statement of conditions should also mention those things the student will be denied. If he will not be permitted to use a calculating machine for his computations he should be told this. If he must work from memory rather than using a reference this should be part of your statement. Does the following objective contain words that limit the conditions under which the student will be expected to perform?

> Given a list of 20 factors which might lead to significant historical events the student will select 15 which contributed to the cause of World War II.

If you beleive this does contain words which limit the conditions of performance go to page 10. If you believe it does not, go to page 11.

Your task was to select the choice that did the better job of stating the conditions of performance. The statement you selected only requires the student to solve simple chemical equations. It says nothing about whether he will be able to use a reference and does nothing to define the word "simple". I don't know what is meant by "simple chemical equations" and neither do you---when I use it. What I think is a simple equation might well be extremely difficult to someone else. (More likely the opposite would be true!).

The conditions of performance should be clear enough that the student will know exactly what is expected of him. He should know how much he will have had to learn by the time the performance is required, what sort of material he will have to use as reference, and how much time he will have if time is a factor.

Return to page 7 and select the other alternative.

Right! The objective tells the student he will have to select factors from a given list. He will not be able to go to the library or refer to a book. He will have to rely on what he has learned. However, he will not have to rely on recall alone since you are providing him with a list that should have some meaning to him.

If you think that there is something significant in requiring him to select 15 out of a list of 20 you are correct. We are beginning to think about the level of expectation or criteria of success. We are telling him that he will have to meet certain requirements in order to pass this part of the course. Part of your objective ought to be a statement of criteria. Are you demanding 100% performance? Sometimes that is the only acceptable level. Do you expect a lower level with extra credit given for a higher degree of performance? Are you setting a time limitation? Unless you are willing to accept any level of performance, you should let the student know what he will have to do and how well he will have to do it. Common sense should prevail here. You should not impose unnecessary or unrealistic criteria, just enough that the student will have learned what you want him to know.

Which of the following clearly states criteria of performance?

1. The student will demonstrate mastery of solving quadratic equations.
2. Given 5 quadratic equations, the student will determine the correct solutions to at least 4 within 30 minutes.

If you selected #1 go to page 12. If your choice is #2 go to page 13.

The sentence says that the student will have 20 factors from which he must make his choice. He can not go to his memory and dig up other factors. He must make his choice from this list.

Actually, while the statement limits the condition of performance, it is also some aid to performance since it tells the student he will not have to rely on memory alone to list 15 factors leading to World War II.

(If you think this isn't a very good objective for a history class you aren't likely to get much quarrel from me. I don't think it is very good, either.)

Turn to page 10.

What is required to demonstrate mastery of quadratic equations? Would finding the solution to one problem be enough? Perhaps you will require the student to solve 20 problems. From the objective as stated does he have any way of knowing?

The way the objective is stated too much is left to the caprice of the teacher. It could be interpreted to mean that you will give him one problem and if he fails that he fails that part of the course. If that is what you mean to do you had better tell your students so that they will have time to try and get into another teacher's class.

Return to page 10 and select choice #2.

Your choice is correct. The objective tells the student that he will have to find the correct solutions to 4 out of 5 problems in order to pass this part of the course. It also tells him that he will have only 30 minutes to determine his answers.

There are some instances when 100% performance is required. Most of the time it isn't necessary to perform at that level. When it isn't, the student has a right to know. This is not to indicate that he "can do only enough to get by" but rather to remove some of the pressure by letting him know just what is required. He can still solve all 5 if he wished. If this will gain him extra credit he should be told this as part of the objective.

If we were now to think back over the work we have done we could list three parts of a behavioral objective as we have been talking about them. We have discussed what we might call the subject matter, the action the student will be performing when he has learned what we want him to learn. We have also discussed the conditions of performance, the how, where, and with what he will perform. And, finally, we have discussed the measure of success or required outcomes.

Let's try a few examples to see if you have a grasp of the fundamentals of writing an objective in behavioral terms. I'll give you a situation and you write a behavioral objective that will fit the situation.

Here is the situation. You are a teacher of sixth grade arithmetic. Your student is working on addition of mixed numbers. (Just so that we keep our various kinds of math straight, to me a mixed number is one that contains both a whole number and a fraction.) You want him to learn how to add three mixed numbers, or more, and convert the fractional part of the answer to a fraction with a value of less than one with the excess over one added to the whole number portion. You will be satisfied if he can correctly work any eight out of ten examples given him within twenty minutes. He will not be able to use his book or ask any other student for help.

After you have written your objective refer to the paragraph below. Please wait until you have finished writing.

Now inspect your objective. Have you clearly stated what he will do so that there can be no question or misunderstanding? Have you listed the conditions so he will know what he can and cannot use for help? Have you clearly told him just how well he will have to perform?

Let's try one more. Think of your own class and subject matter. Pick a small topic and write a behavioral objective. When you have finished writing refer to the paragraph above. Good luck!

SAMPLES OF STUDENT FEEDBACK INSTRUMENTS

Listed below are just a few samples of some student feedback intruments, ala Fox, Luszki, and Schmuck,[1] that may be useful to you in working with your FAU teachers.

CLASSROOM LEARNING CLIMATE
Student Feeling Toward Peers, Studies and Teacher

INSTRUMENT #1

1. Designed for general view of classroom climate.
2. 5 to 10 minutes in length.
3. Items of this instrument are merely suggestive of what can be used; teachers can include items that reflect specific concerns he has for his class and special student needs.

DATE________________

YOUR NUMBER________________

CLASS________________

CLASSROOM LIFE

Here is a list of some statements that describe life in the classroom. Circle the letter in front of the statement that best tells how you feel about this class. There are no right or wrong answers.

1. Life in this class with your regular teacher has been:

   a. all good things
   b. mostly good things
   c. more good things than bad
   d. about as many good things as bad
   e. more bad things than good
   f. mostly bad things

2. How hard are you working these days on learning what is being taught at school?

   a. very hard
   b. quite hard
   c. not very hard
   d. not hard at all

---

1. Diagnosing Classroom Learning Environments, Fox, Luszki, Schmuck - Science Research Associates.

3. When I'm in this class I

   a. usually feel wide awake and very interested
   b. am pretty interested, kind of bored part of the time
   c. am not very interested, bored quite a lot of the time
   d. don't like it, feel bored and not with it

4. How hard are you working on schoolwork compared with the others in the class?

   a. harder than most
   b. a little harder than most
   c. about the same as most
   d. a little less than most
   e. quite a bit less than most

5. How many of the pupils in this class do what the teacher suggests?

   a. most of them do
   b. more than half do
   c. less than half do
   d. hardly anyone does

6. If we help each other with our work in this class, the teacher:

   a. likes it a lot
   b. likes it some
   c. likes it a little
   d. doesn't like it at all

7. How good is your schoolwork compared with the work of others in the class?

   a. much better than most
   b. a little better than most
   c. about the same as most
   d. not quite as good as most
   e. much worse than most

8. How often do the pupils in this class help one another with their schoolwork?

   a. most of the time
   b. sometimes
   c. hardly ever
   d. never

9. How often do the pupils in this class act friendly toward one another?

   a. always
   b. most of the time
   c. sometimes
   d. hardly ever

INSTRUMENT #2

1. May be used for supportive information for Instrument #1.
2. Can provide some useful criticisms of class life, positive and negative.
3. Allows for considerable latitude in answering.
4. Allows for students to list as few or as many items as desired.

Some of the best things about this class are:________________________________

Some of the worst things about this class are:_______________________________

INSTRUMENT #3

1. Permits students to register their feelings about teacher's characterisitics and classroom methods.
2. Anonymity desirable because of personal nature of responses.

DATE____________________

CLASS____________________

(Don't write your number.)

MY TEACHER

Pretend that you could have your teacher change in some way. For each number check the box that best tells how you would like you teacher to act in this class. There are no right or wrong answers.

CONTINUE WITH CHART ON THE NEXT PAGE.

	MUCH MORE THAN HE DOES NOW	A LITTLE MORE THAN HE DOES NOW	THE SAME AS HE DOES NOW	A LITTLE LESS THAN HE DOES NOW	MUCH LESS THAN HE DOES NOW
1. Help with work					
2. Yell at us					
3. Make sure work is done					
4. Ask us to decide about how we will work					
5. Smile and laugh					
6. Make us behave					
7. Trust us on our own					
8. Make us work hard					
9. Show that he understands how we feel					

INSTRUMENT #4

1. May be used for supportive information for Instrument #3.
2. Can provide useful criticism of teacher's characteristics and classroom methods.
3. Anonymity desirable because of personal nature of responses.

Some of the best things about my teacher are:______________________________

Some of the worst things about my teacher are:______________________________

INSTRUMENT #5

Combine both direct and indirect approach to feedback - directs pupil to specific aspects of class, but allows student to supply own answers.

DATE____________________

YOUR NUMBER ________________

CLASS____________________

CLUES ABOUT CLASSROOM LIFE

So that members of a class and their teacher may get ideas about how to make life more interesting and important for everybody in the class, each person needs to contribute his or her ideas about what needs to be improved. What things happen that shouldn't happen? What ought to happen but doesn't? Try to imagine yourself as a detective searching for clues to a "good" day and a "bad" day in this class. Jot down what you would look for or might see to answer these questions. There are no right or wrong answers.

What are some clues to a "good" day in our class? What things happen that are signs of a "good" day?

1. ____
2. ____
3. ____
4. ____
5. ____

What are some things that should happen a lot more than they do to make it a better class for learning and having fun?

1. ____
2. ____
3. ____
4. ____
5. ____

INSTRUMENT #6

Provide for pupil's reactions to specific learning experiences.

DATE ________________

YOUR NUMBER ________________

CLASS________________

POST CLASS REACTIONS

Here are some questions about what happened in class today. Circle the letter in front of the statement that best tells how you feel about what happened. There are no right or wrong answers.

1. How much do you feel you learned today?

    a. don't think I learned much
    b. learned a little bit
    c. learned quite a lot
    d. learned a lot today
    Please write why you feel this way:________________________

2. How clear was what we were doing ________________________?
    (refer to some specific activity.)

    a. very clear to me
    b. pretty clear to me
    c. not so very clear
    d. not clear at all
    What do you think was the reason we did what we did?________________

3. How often did you feel lost during this class period?

    a. lost most of the time
    b. lost quite a few times
    c. lost a couple of times
    d. not lost at all
    What made you feel lost?________________________

4. How often did you feel you wanted some extra help during this class period today?

    a. wanted help quite a few times
    b. wanted help several times
    c. wanted a little help once or twice
    d. wanted no help
    What kind of help did you want? ________________________

5. How often did you see some one else needing help during our class period today?

   a. saw some one needing help quite often
   b. saw some one needing help quite a few times
   c. saw some one needing help a few times
   d. saw no one needing help
   How could they have been helped?______________________________

6. How did you feel about your participation in the discussion this last period?

   a. not satisfied at all
   b. not very satisfied
   c. fairly satisfied
   d. very satisfied
   Why do you feel this way?______________________________

7. How do you feel about what the teacher did in this last class period?

   a. very satisfied
   b. fairly satisfied
   c. not very satisfied
   d. not satisfied
   What makes you feel this way?______________________________

LOWER ELEMENTARY GRADES

Research has shown it is worthwhile to use these kinds of tools with lower elementary grades. The teacher of these children could use the same instruments as above by reading them and having students put an X under the degree of emotional response noted in the questions.

USES OF THE DATA - (not all uses are listed)

Instrument #1
1. Inspect response of entire class in order to figure a strategy for any desired change.
2. Look at subgroups or individuals who deviate from the rest of the class in order to determine what actions need to be taken to assist these groups or individuals.

Instrument #2
1. A typical response may be used as a tool to help identify those pupils who would benefit from guidance services.
2. Look for positive and negative responses in order to reach an evaluation of the classroom climate so you can figure out strategies to achieve desired climate.

Instruments #3 & 4
1. Can provide some useful criticisms of class life, positive and negative.

Instruments #5 & 6

1. Establish a "set" for joint responsibility for improving classroom procedures through student participation in studying the results.
2. Students can tally the results and read open-ended portions to the class.
3. Students can head discussion on proposed changes.

SOCIAL RELATIONS IN CLASSROOM
Friendships - Relationships

The emotional support a student receives is important to his academic achievement. Consequently, it is necessary for a teacher to have knowledge of the social relations within his classroom.

INSTRUMENT #1

1. Provides information about which students are not liked by their peers.
2. Provides information about which are liked by their peers.

DATE ____________

YOUR NUMBER ____________

CLASS ____________

HOW I FEEL ABOUT OTHERS IN MY CLASS

Everybody has feelings about other people. We like some people a lot, some a little, and some not at all. We may think it is not proper or polite to dislike some one, but when we are really honest we realize that everyone has some negative feelings about certain people. If the teacher knows the way you feel about other members of your class, he can often plan things better. There are no right or wrong answers.

Using your class list with the names and numbers of your classmates, write the numbers of the students you would pick in answer to the following questions.

1. Which three students in this class do you like best?

____________ ____________ ____________

2. Which three students in this class do you like least?

____________ ____________ ____________

3. How many students in this class would you say you know pretty well?

   a. all of them
   b. all but a few
   c. more than half
   d. about half
   e. less than half
   f. only a few

4. How many students in this class would you say you like quite a lot?

   a. all but a few
   b. more than half
   c. about half
   d. less than half
   e. only a few
   f. none

5. Outside of this class, do you know people whom you like just as much or more than anyone in this class? YES ____________ NO ____________
   If the answer is YES, please fill in their names in the right place below.

These friends are younger than I am

____

____

____

These friends are the same age as I am

____

____

____

These friends are older than I am

____

____

____

INSTRUMENT #2

1. Provides information about who the student perceives as possessing power.
2. Provides information on the student's ability to influence others.
3. Helps assess competence, cooperativeness and helpfulness as perceived by the students.

DATE ______________________

YOUR NUMBER ________________

CLASS______________________

THE PEOPLE IN MY CLASS

It is a job of the teacher to find ways to make school life more interesting and worthwhile for all the students in the class. This form is your chance to give the teacher confidential information that will help him do this well. The way you see things is what counts. There are not right or wrong answers.

Using your class list with the names and numbers of your classmates, write the numbers of the students you would pick in answer to the following questions.

1. Which three students in this class are most often able to get other students to do things?

   ______________ ______________ ______________

2. Which three students in this class do the girls most often do things for?

   ______________ ______________ ______________

3. Which three students in the class do the boys most often do things for?

   ______________ ______________ ______________

4. Which three students in this class are most cooperative with the teacher and like to do what the teacher wants the class to do?

   ______________ ______________ ______________

5. Which three students in this class most often go against the teacher and what he would like the class to do?

   ______________ ______________ ______________

6. Which three persons in this class do you think could make the biggest improvement in their schoolwork if they wanted to?

   ______________ ______________ ______________

7. Which three persons in this class do you think show the most ability to learn new things that are taught in class?

   ______________ ______________ ______________

8. Who would you most like to be if you couldn't be yourself but had to be some one else in this class?

____________ ____________ ____________

From the two preceeding instruments a teacher can analyze the data by assigning a "+1" to positive choices and "-1" to negative choices. From this a matrix may be built such as the one shown below.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1		1			1		−1				1			−1		−1
2	1				1		−1		1				−1			−1
3	1				1			−1			1		−1		−1	
4		1			1		−1		1					−1		−1
5	1			1				−1			1			−1		−1
6		1		1			−1				1			−1		−1
7		1							1		1			−1	−1	−1
8				1			1		1				−1	−1		−1
9		1		1			−1				1		−1		−1	
10		1			1		−1				1		−1	−1		
11		1			1			−1	1				−1		−1	
12	1							−1	1		1		−1			−1
13			−1	1	1						1			−1		−1
14				−1	1			−1			1		−1			1
15	1			−1	1				−1		1		−1			
16			−1		−1				1		1		−1		1	
Total +	5	7	0	5	9	0	1	0	7	0	12	0	0	0	1	1
Total −	0	0	2	2	1	0	6	5	1	0	0	0	10	8	4	9

USES OF THE DATA - (not all uses listed)

1. Help students to recognize and accept both positive and negative feelings from their peers. Show them this is a normal state of being.
2. Show students that negative or critical feelings are often necessary for constructive change.
3. Can identify students who need the most help in improving interpersonal relations. This help can come from the teacher or from some other source.
4. Will identify highly influential students.
5. For grouping purposes, in order to place certain members where their influence will be helpful.
6. Help students perceive as acceptable a variety of individual differences. A "skills chart" can be developed showing each student has some skill to offer to the class as a whole.
7. Involve neglected or rejected students in more activities that will increase their chances for participation.
8. Group "high status" students (those perceived by the teacher as influential and cooperative and who others want to be like) with students who are experiencing "acceptance" difficulties.
9. Get sub-groups to interact productively with each other in wholesome competition.
10. Individual student-teacher conferences can help rejected members of the class.

STUDENT NORMS

The Standards and Expectations of Students for Classroom Behavior

It is important for the teacher to know that in addition to his expectations and standards for performance or behavior, the classroom may have some of its own. These may support or be at cross purposes to the teacher's. Peer group ratings will be used to make a composite rating of the perceptions class members have about what classmates feel is appropriate behavior.

INSTRUMENT #1

Will reveal what individual students perceive the group norms to be.

DATE ____________________

YOUR NUMBER ______________

CLASS ___________________

HOW THIS CLASS FEELS

Classes are quite different from one another in the way students feel about schoolwork, one another, and the teacher. How do you think your classmates feel about the following things? Circle the answer you feel is appropriate for each of the statements below. There are no right or wrong answers.

		How Many Feel This Way?				
1.	It is good to take part as much as possible in classroom work.	All	Many	Half	Some	A Few
2.	Asking the teacher for help is a good thing to do.	All	Many	Half	Some	A Few
3.	It is good to help other students with their schoolwork except during tests.	All	Many	Half	Some	A Few
4.	Schoolwork is fun more often than it is not.	All	Many	Half	Some	A Few
5.	Our teacher really understands how we students feel.	All	Many	Half	Some	A Few

---

INSTRUMENT #2

Will reveal how the individual feels the group norms are or should be.

DATE ____________________

YOUR NUMBER ______________

CLASS ___________________

HOW DO YOU FEEL ABOUT THESE THINGS?

Circle the answer that tells how you feel about each of the statements below. There are no right or wrong answers.

Page 14

1. It is good to take part as much as possible in classroom work.

   a. I agree almost always
   b. I agree more than I disagree
   c. I agree as often as I disagree
   d. I disagree more than I agree
   e. I disagree almost always

2. Asking the teacher for help is a good thing to do.

   a. I agree almost always
   b. I agree more than I disagree
   c. I agree as often as I disagree
   d. I disagree more than I agree
   e. I disagree almost always

INSTRUMENT #3

Will reveal the students' perceptions of what the teacher's classroom norms are.

DATE ____________________

YOUR NUMBER _______________

CLASS _____________________

HOW DO YOU THINK YOUR TEACHER FEELS?

Circle the answer that tells how you think your teacher feels about each of the statements below. There are no right or wrong answers.

1. It is good to take part as much as possible in classroom work.

   a. the teacher would agree almost always
   b. the teacher would agree more than disagree
   c. the teacher would agree as often as disagree
   d. the teacher would disagree more than agree
   e. the teacher would disagree almost always

2. Asking the teacher for help is a good thing to do.

   a. the teacher would agree almost always
   b. the teacher would agree more than disagree
   c. the teacher would agree as often as disagree
   d. the teacher would disagree more than agree
   e. the teacher would disagree almost always

USES OF THE DATA - (not all uses listed)

Instrument #1

1. Teacher may see the differences in what the individual perceives to be group norms and what actually are the group norms.
2. Can help answer such questions as "Is class participation the thing to do? Do the students think I'm for or against them? How does the class feel about individuals helping each other? Are they enjoying the work we do?"

Instrument #2

1. Find discrepancies between the class norms and how individual students feel the norms are or should be.
2. Identify the student whose personal opinions are different from his perceived class norms. He may feel alienated from the class.

Instrument #3

1. Identify discrepancies between the students' perception of class norms and the ones actually held by the teacher. More effective student-teacher communication may be necessary.

STUDENT - TEACHER INTERACTION

Verbal and Non-Verbal Exchanges

Interaction between a teacher and his students can be so complex that a teacher may be unaware of certain aspects of it. Discrepancy may exist between his goals and his classroom behavior. He may wish to be viewed as warm and friendly but students may see his behavior as threatening and uncomfortable for them.

INSTRUMENT #1

Reveals students' perceptions of the class session. These items are of typical student-teacher interaction. Each teacher may revise questions to reflect more closely his own classroom situation.

DATE ____________________

YOUR NUMBER ____________

CLASS ___________________

STUDENT PERCEPTIONS OF A CLASS PERIOD

Think about the last hour of class. About how much time would you say was spent in each of the following activities? Circle the answer you think best tells how much time was spent. There are no right or wrong answers.

How much time?

1. The teacher talking to the whole class - telling, answering questions, asking something. A Lot Some A Little None

2. The teacher talking to individual students - telling, answering questions, asking something. A Lot Some A Little None

3. Students talking to the teacher - telling, answering questions, asking something. A Lot Some A Little None

Now think about what you yourself did during the last class hour. Write in the choice of time you think is right. Make the best guess you can.

4. My teacher told or asked me things or answered my questions _____ Times

5. I told or asked my teacher things or answered his questions _____ Times

6. I told or asked other students things or answered their questions_____ Times

7. During the last class hour, my teacher told or asked me things or answered my questions:

   a. much more than most other students
   b. a little more than most other students
   c. a little less than most other students
   d. much less than most other students

8. I volunteered to say things or do things during the class hour:

   a. much more than most other students
   b. a little more than most other students
   c. a little less than most other students
   d. much less than most other students

9. When my teacher told or asked me something, it was:

   a. only about my work
   b. mostly about my work, but a little about my behavior
   c. mostly about my behavior, but a little about my work
   d. only about my behavior

10. When my teacher told or asked me something, he was:

    a. very pleased
    b. satisfied
    c. somewhat dissatisfied
    d. quite dissatisfied

USES OF THE DATA - (not all uses listed)

1. Identify any individuals or groups who see themselves as either overparticipating or underparticipating. Plan activities to bring about the desired goals.

2. Data will show how students perceive the participation of teachers and students.

3. Will show student's perception of the interaction as it is related to the work at hand and the teacher's degree of satisfaction with the individual. Better communications may be needed between teacher and students or a change in the teacher's behavior may be called for.

* * * * * * *

Other forms of student feedback are available and may be of concern to teachers, but are not shown here. It is our hope that these feedback instruments may wet your appetite for more information. We have some booklets on feedback instruments, once again ala Fox, Luszki, and Schmuck. See Wes for them. Also, for further information, consult with the feedback committee.

CLARIFYING QUESTIONS

Clarifying Questions are those questions used to gain a common understanding of a statement or an idea.

In any class discussion it is not unusual to find one or both of the following conditions existing: 1) a number of the participants do not understand what a fellow student has said, or 2) a number of participants may think they understand what was said but in fact their interpretation is far from what was intended.

In order to develop maximum involvement in class discussion it is most important there be as high a degree of common understanding as possible. As a teacher makes an effort to achieve maximum understanding, Clarifying Questions can be a big help. It should always be the aim of the teacher to ask clarifying questions in a supportive, encouraging way. Following are some examples of Clarifying Questions.

Always in a supportive, encouraging way a teacher may:

1. Ask a student to explain a little more fully what he is saying.

   "Jim, what you have just said is a good point. Could you help us by explaining a little more fully your ideas?"

2. Ask a student to define in his words a few key points.

   "Jim, it would help us to understand more fully if you would tell us what you mean by -----."

3. Ask a student to give an example or a for instance.

   "Jim, your statement is a good one. Could you give us an example of how what you have just said might work?"

4. Ask a participant to give an example or a for instance.

   "Bill, what Jim just said is important, for us to understand. Could you help us be sure we aren't misinterpreting what he said by giving us an example?"

5. Ask a member of the class to explain in his words what was just said.

   "Bill, what Jim said is an important thought. Could you help us be sure we understand what Jim meant by explaining what you thought he said?"

6. Ask the person who has contributed to ideas or statements to "check out" with another member of the class what he thought was said.

   "Jim, could you check out with someone what they understood you to say?"

7. To ask a student to repeat what he said.

   "Jim, would you repeat what you just said?"

8. To paraphrase what a student just said and then ask him and a few others if that is what was meant.

   "Jim, please stop me if I am not saying what you menat. My understanding of what you said was - - - . Is this what you meant, Jim?"

Paraphrasing a student's remarks and then asking if this is what they meant is at times risky. In some cases the student may agree with what the teacher said even though this is not what he intended. It is a good policy to always put the burden of clarifying back on the student.

These are only some of a number of probable examples of how a teacher might ask Clarifying Questions for the purpose of gaining common understanding in a class discussion. It is most important that in the process of asking Clarifying Questions, the teacher does not infer a student's statement is not worthy.

QUESTIONS THAT RAISE OR LOWER THE LEVEL OF ABSTRACTION

Definition:

Questions that raise or lower the level of abstraction are those which cause the student to make use of higher or lower mental processes.

Levels of Abstraction:

The levels of abstraction may be identified by referring to Bloom's categories of thinking:

1. Memory
2. Translation
3. Interpretation
4. Application
5. Analysis
6. Synthesis
7. Evaluation

Each of the above will be further defined.

MEMORY - recalling or recognizing information:

This category of thinking is practically self-explanatory but it should be noted that more complex mental processes cannot take place until the facts or information have been remembered. These questions usually ask what, when or where.

TRANSLATION - changing given information into one's own words or into another form.

Many times a teacher will want to check a student's understanding of information that has been given to him. A question that calls for the student to "translate" the given information into his own words or another form can often accomplish this.

INTERPRETATION - discovering and explaining relationships between facts, generalizations, definitions, values and skills.

On the level of interpretation, the student should be able to take given sets of information and make comparisons according to their similarities or differences. The student should be able to determine which ideas, by implication, will result based upon certain specific information. When a student is unable to perform at this level of abstraction, it is necessary for the teacher to lower the level of abstraction by asking a questions that calls for either translation or memory.

* This statement holds true for each of the following levels of abstraction and will therefore include all previous levels of abstraction.

APPLICATION - solving problems through identification of issues and selection of appropriate generalizations and skills.

The application question should be designed so that it gives the students practice in the transfer of knowledge. These questions should have the following characteristics:

1. the knowledge asked for should have explanatory or problem-solving power.
2. the knowledge should be dealt with in its entirety rather than in parts or segments.
3. the question should contain a minimum of directions since it is based on previously learned material and thus the student should know what to do.

* See Interpretation on the previous page.

The application question differs from the interpretation question in that it requires the student to go beyond just knowing an abstraction and being able to demonstrate its use when asked to do so; in application, the student must, when presented with a problem, apply the appropriate abstraction without being told which abstraction is correct and without having to be instructed in the use of the abstraction for the situation in question.

ANALYSIS - systematic examination of facts in order to solve problems.

Analysis, as a category, differs from the lower levels of application and interpretation in that the teacher must know and teach the rules for reaching valid conclusions. The analysis question, in the strictest sense, is a little more difficult to use in the classroom, but teachers should become aware of the reasons for using them:

1. It teaches students to reason from the specific to the general (INDUCTION). Rules that provide standards for the quality of an inducted generalization.
    a. observation of a number of instances.
    b. observation of no contrary instances.
    c. non-verbal character of the phenomenon.
    d. independent confirmation by deduction from more general laws.
2. Teaches students to reason from generalization to specific instances (DEDUCTION).
3. Teaches students to recognize and identify fallacies or common mistakes in reasoning.

The analysis question is usually posed in a way that would approximate the way the problem would be encountered outside of the classroom. The students are usually presented with an example of reasoning and are then instructed to analyze it.

SYNTHESIS - solving a problem that requires original, creative thinking.

The synthesis question offers to the student more freedom than is found in any previous level of abstraction, in that it is not limited to subject matter or particular processes that are stated or implied in the question. The student finds himself faced with a problem that offers a variety of possibilities from which he may derive many satisfactory answers (divergent thinking). In order to arrive at these answers, the student is encouraged to use whatever information or thought processes that he can summon. In using synthesis questions, it is important that the atmosphere of the classroom be such that the students know that the teacher does not have an answer in mind which the students are expected to duplicate.

EVALUATION - making an assessment of good or bad, right or wrong, etc. according to one's own standards.

In order for a question to qualify in the evaluation category, two characteristics must be present:

1. the student must set up appropriate standards,
2. the student must determine whether or not the object or idea in the question meets the standards.

Before a student can properly evaluate, he must have preparation that falls in, primarily, the memory and interpretation categories but which also includes all other levels of abstraction. The student must also know something about the nature of values, i.e. unlike facts, values can not always be determined to be true or false, therefore, in evaluation, facts and values will not be treated in the same manner.

Lev. of Abst.	Teacher Goals	Student Bheavior	Sequence	Examples
1. Memory	To have student know factual material	Recall facts as given		MEMORY - According to our author what presidents of the United States have been rated "superior" by historians in their contributions to our republic? What were the main contributions of each?
2. Translation	To have student demonstrate understanding of factual material	State given info. in one's own words; give definition for terms used in light of student's form experience	Remember Translate	TRANSLATION - From our reading of the text about your constitution, will you please draw a chart, picture, diagram that illustrates the "separation of powers" of our government? Or, can you describe in your own words, the main presidential contributions of Adams and Jefferson?
3. Interpretation	To have students show relationships between facts	1. determine whether ideas and facts are identical, similar, unrelated, different or contradictory (comparisons) 2. determine ideas which follow from specific evidence (implications) 3. show relationship of generalization to its supporting evidence 4. show relationship of a value, skill or definition to an example of its use	Remember Translate Interpret	INTERPRETATION - Are the contributions made by Washington and Lincoln to our republic, similar or disimilar? Or, what are the similar relationships between the contributions of Washington and Lincoln?
4. Application	To have students solve problems using previous knowledge	Use previously learned materials or skills in new situations	Remember Translate Interpret Apply	APPLICATION - Based on the kinds of contributions of President's that historians have classified as superior, what current problems, if solved, would rate our present President as superior?

Lev. of Abs.	Teacher Goals	Student Behavior	Sequence	Examples
5. Analysis	1. To have students examine facts in order to solve problems	1. Reason from the specific to the general(inductive thinking) 2. Reason from the general to the specific(deductive thinking)	1. Remember 2. Translate 3. Interpret 4. Apply 5. Analyze	ANALYSIS - President Johnson will not ever be rated as a superior President. He has not ended the Vietnam war. He has not established justice with law and order. He has established a credibility gap. Why is this conclusion valid or invalid?
6. Synthesis	1. To have students examine alternative methods of solving problems	1. Bring together all facts to offer many possible solutions to given problems	1. Remember 2. Translate 3. Interpret 4. Apply 5. Analyze then 6. Synthesize	SYNTHESIS - Based on your knowledge, how can the President of the U.S. make a contribution to our republic and still extricate us from the Vietnam war?
7. Evaluation	1. To have students make an assessment of value according to their their own standards	1. Set up appropriate standards 2. Determine whether ideas or objects meet the standards set up	1. Remember 2. Translate 3. Interpret 4. Apply 5. Analyze 6. Synthesize then 7. Evaluate	EVALUATION - What do you think makes a "superior" President and do or do not the last two presidents meet these standards?

* All steps in the sequence are not necessarily done for each problem that is discussed in the classroom*

PROBING QUESTIONS

Probing Questions are used to prompt, move, induce, inspire, and help students to respond: helps students to go beyond their first response; demonstrate the difference between factual inquiries i.e., how much? What is? How would you? How else; requires translation, interpretation, extra polation, identification, discovering, synthesizing, and analyzing. This response (to bridge the credability gap) needs acceptance in relationship to their own community and then to the global community.

TEACHER BEHAVIOR:

1. The teacher will ask student to define his terms.
2. The teacher will ask student to give examples.
3. The teacher will ask student to give data to support his response. (This procedure is cyclical as questions progress.)
4. The teacher will be acceptive of and receptive to the student's responses in light of his own student experiences.
5. The teacher will reconstruct her question when applying to the global community.
6. The teacher will ask questions to clarify concepts of content and practice i.e., in the larger community.
7. The teacher will demonstrate; she is listening.
8. The teacher will articulate appropriate frames of reference.
9. The teacher will articulate questions which will guide discussions and work tasks that will reflect the interests and abilities of the students.
10. The teacher will articulate the use of student ideas and build questions on student ideas.
11. The teacher will articulate questions that will match the pace of the students' demonstrated capacity for absorbing information, organizing, relating to experiences, making inferences.

STUDENT BEHAVIOR:

1. The student recognizes that he can respond in light of his own real life experiences and/or global information.

    a. articulates his own steps in problem solving
    b. expresses possible answers
    c. expresses and/or explores alternative solutions
    d. seeks new and different experiences
    e. accepts or rejects ideas on basis of evidence
    f. can challenges ideas
    g. verbalizes, questions, concerns, ideas, feelings, beliefs, intentions and plans

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILLS	THE STUDENT	OBSERVABLE ACTIVITIES
USING STUDENT IDEAS DEFINITION: Restatement, clarification, building or developing ideas expressed by a student.	1. is motivated A. to learn B. to be industrious	1. expresses his interest 2. seeks tasks e. initiates activities 4. tries alternative solutions 5. seeks help
	2. solves problems	1. articulates problems and initiates solutions 2. asks questions of self and others 3. recognized the possibility of alternative solutions 4. relates problems to past experiences 5. accepts or rejects ideas based on evidence
	3. examines ideas	1. presents ideas and theories 2. seeks new and different experiences 3. accepts or rejects ideas bssed on evidence 4. relates new ideas to previous knowledge 5. asks relevant questions
	4. becomes an inquirer	1. See #3 -- examines ideas
	5. respects self	1. helps others 2. exhibits willingness to take risks 3. See #3 -- examines ideas
	6. is capable of self-direction	1. weighs the evidence and makes choices 2. challenges ideas 3. sets performance standards for himself 4. initiates activities 5. seeks new and different experiences
	7. is self-disciplined	1. sets performance standards for himself 2. makes considered choices 3. perseveres in carrying out a task

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL		
PRAISING AND ENCOURAGING STUDENTS	1. is motivated A. to learn B. to be industrious C. to verbally participate	1. expresses his interest and ideas 2. seeks tasks 3. initiates more activities 4. finds alternative solutions 5. accepts help
DEFINITION: Approval of an action or idea when perceived by student as same.	2. improves self-concept	1. helps others 2. accepts the risk of expressing 3. seeks new and different experiences 4. articulates problems and possible solutions
	3. exhibits more independence; self-direction	1. sets his own performance standards 2. weighs the evidence and makes choices 3. See #2 - improves self-concept

TEACHING SKILL	THE STUDENT	OBSERVABLE ACTIVITIES
ESTABLISHING SET DEFINITION: Providing readiness and rapport for student involvement in the lesson.	1. is motivated A. to learn B. to be industrious	1. expresses his interest 2. seeks tasks 3. initiates activities 4. tries laternative solutions 5. seeks help
	2. is receptive to lesson	1. relates new knowledge to past experiences 2. asks relevant questions 3. looks for alternative solutions 4. accepts direction from teacher 5. initiates activities 6. strategies as defined by teacher, and self
	3. is ready to listen	1. attentive behavior 2. responds to questions 3. challenges ideas that differ from his own (clarification of others ideas)

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL	THE STUDENT	OBSERVABLE ACTIVITIES
CLOSURE	1. solves problems	1. asks questions of self and others 2. recognizes the possiblilities of alternative solutions 3. relates problems to past experiences 4. accepts and rejects ideas based on evidence
DEFINITION: The pulling together of major purposes principles and content of a lesson, so that students can relate new knowledge and experience to past knowledge and experiences.	2. is motivated for future learning	1. seeks new tasks, experiences and ideas 2. seeks help 3. examines ideas 4. is willing to take risks 5. weighs evidence and makes choices 6. sets his own performance standards

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL	THE STUDENT	OBSERVABLE ACTIVITIES
RECOGNIZING (1) AND OBTAINING (2) ATTENDING BEHAVIOR	1. is motivated A. for learning B. for participation	1. asks questions 2. answers questions 3. articulates problems and initiates solutions 4. seeks help
DEFINITION: (1) Noting through visual cues of facial expression, eye contact, body posture, etc., indications of interest or boredom, comprehension or bewilderment. (2) ability to elicit it from students interest and comprehension.	2. is receptive of lesson	1. relates new knowledge to past experiences 2. asks relevant questions 3. looks for alternative solutions 4. accepts direction from teacher 5. self-directed activities engages in
	3. is ready for problem solving	1. listens 2. asks questions and offers possible answers 3. accepts direction from teacher 4. accepts or rejects ideas based on evidence

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL	THE STUDENT	OBSERVABLE ACTIVITIES
ENCOURAGING AND CONTROLLING STUDENT PARTICIPATION	1. is motivated to learn	1. expresses his ideas 2. seeks new ideas 3. asks questions which are relevant 4. seeks clarification of his own and others ideas
DEFINITION: Actively involving students in the lesson and directing their contribution toward the goal of the lesson.	1. is an inquirer	1. presents ideas and theories 2. seeks new and different experiences 3. accepts or rejects ideas based evidence 4. relates new knowledge to past experiences 5. asks questions and offers possible solutions

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL	THE STUDENT	OBSERVABLE ACTIVITIES
PROVIDING FEEDBACK TO STUDENTS	1. is motivated to learn	1. expresses his interests 2. seeks tasks 3. initiates activities 4. tries alternative solutions 5. seeks help
	2. communicates better	1. verbalizes questions, feelings, and beliefs 2. defines terms 3. clarifies ideas 4. listens and responds
	3. solves problems	1. articulates problems and initiates solutions 2. asks questions of self and others 3. recognizes the possibilities of alternative solutions 4. relates problems to past experiences 5. accepts or rejects ideas based on evidence
	4. is receptive to lesson	1. relates new knowledge to past experiences 2. asks relevant questions 3. looks for alternative solutions 4. accepts direction from teacher 5. initiates activities 6. states goals as defined by teacher and self

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL	THE STUDENT	OBSERBABLE ACTIVITIES
ACCEPTING STUDENT FEELING DEFINITIONS: Any act or statement which recognizes the feeling of students without expressing teacher judgment	1. is motivated to learn	1. expresses feeling openly 2. initiates activities and ideas 3. tries alternative solutions 4. seeks help 5. shows interest 6. expresses ideas
	2. helps others	1. listens to ideas of others 2. accepts others 3. accepts others' ideas
	3. respects self	1. is willing to take risks 2. presents ideas and theories 3. seeks new and different experiences 4. relates old knowledge to previous experiences 5. asks relevant questions
	4. communicates better	1. verbalized questions, concerns, ideas, beliefs, concerns, feelings, intentions and plans 2. defines terms 3. clarifies ideas 4. listens and responds

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL	THE STUDENT	OBSERVABLE ACTIVITIES
PROVIDING REINFORCEMENT	1. is motivated	1. expresses interest 2. seeks tasks 3. initiates activities 4. trys alternative solutions 5. seeks and accepts help
DEFINITION: Strengthening of student behaviors through the use of rewards and punishment	2. feels self-worth	1. helps others 2. expresses interest 3. makes considered choices 4. challenges ideas 5. accepts risks 6. participates

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL	THE STUDENT	OBSERVABLE ACTIVITIES
EXPLAINING AND CLARIFYING IDEAS DEFINITIONS: Actions of students and/or the teacher that facilitates communication by making ideas clearer	1. communicates better	1. verbalizes questions, concerns, ideas, beliefs, feelings, intentions and plans 2. defines terms 3. clarifies ideas 4. listens and responds
	2. solves problems	1. articulates problems and initiates solutions 2. asks questions of self and others 3. recognizes the possibility of alternative solutions 4. relates problems to past experiences 5. accepts or rejects ideas based on evidence

POSSIBLE STUDENT BEHAVIORS

TEACHER SKILL	THE STUDENT	OBSERVABLE ACTIVITIES
ESTABLISHING APPROPRIATE FRAMES OF REFERENCE DEFINITION: Looking at an idea or problem from a point of view that is in keeping with the needs and interests of the students	1. is motivated to learn	1. expresses his interest 2. seeks tasks 3. initiates activities 4. tries alternative solutions 5. seeks help
	2. communicates better	1. relates new knowledge to past experiences 2. verbalized questions, concerns, ideas, beliefs, intentions and plans 3. defines terms 4. clarifies ideas 5. listens and responds

ASKING OPEN QUESTIONS

definition: Open questions are those which call for more than simple memory or recall.

objectives:

1. to encourage student participation.
2. to help students change information into their own words.
3. to help students discover and explain relationships between facts, generalizations, definitions, values, and skills.
4. to help students solve their problems through identification of issues and selection of appropriate generalizations and skills.
5. to help students analyze facts in order to solve problems.
6. to help students solve problems with original, creative thinking.
7. to help students make judgements of good or bad, right or wrong, according to their own standards.

rationale: One of the purposes of education is to give students tools which will help them gather knowledge as it is needed. Open questions generally require students to go through more complex processes of thinking in order to arrive at conclusions or recognize generalizations that can be made from any given set of facts. The teacher who uses open questions will usually get responses that show more creative, critical or original thinking by students.

ASKING CLOSED QUESTIONS

definition: Closed questions are those that call for reproduction of facts, formulas and other items of remembered content.

objectives:

1. to help students remember facts that can be used later in higher order mental processes, i.e. interpretation, evaluation, etc.
2. to help students remember generalizations of concepts made by experts in various fields so that these generalizations can be applied in similar situations.
3. to help students remember definitions so that there will be a common base of communication.

rationale: When asking questions that call for remembered content, the tendancy seems to be for teachers to ask about the most obvious, and sometimes, least important facts contained in student textbooks. Teachers should become aware of the concepts or generalizations or interpretations that they wish to pull from a particular lesson or unit of study and ask questions that will recall the facts needed to formulate these concepts.

TECHNICAL SKILLS OF TEACHING

1. ESTABLISHING SET

The term set refers to the establishment of cognitive rapport between pupils and teacher to obtain immediate involvement in the lesson. Experience indicates a direct relationship between the effectiveness in establishing set and effectiveness in the total lesson. If the teacher succeeds in creating a positive set, the likelihood of pupil involvement in the lesson will be enhanced. For example, one technique for inducing positive set is through the use of analogies that have characteristics similar to the concept, principle, or central theme of the lesson. By training teachers in set induction procedures and having them apply these procedures in micro-teaching sessions, their subsequent classroom teaching can be significantly improved.

2. ESTABLISHING APPROPRIATE FRAMES OF REFERENCE

A student's understanding of the material of a lesson can be increased if it is organized and taught from several appropriate points of view. A single frame of reference provides a structure through which the student can gain an understanding of the materials. The use of several frames of reference deepens and broadens the general field of understanding more completely than is possible with only one. For example, the Emancipation Proclamation becomes more meaningful to the student when it is understood from the frames of feference of the Northern white abolitionist, the Southern white, the Negro slave in the seceded South, the free Negro, the European clothing manufacturer, the political leaders of England, and as an example of the reserve powers of the American President, than if it is simply discussed as the document issued by Lincoln which freed the slaves. Teachers can be trained to become more powerful identify many possible frames of reference that might be used in instruction, to make judicious selection from among them, and then to present them effectively.

3. ACHIEVING CLOSURE

Closure is complementary to set induction. Closure is attained when the major purposes, principles, and constructs of a lesson, or portion of a lesson, are judged to have learned so that the student can relate new knowledge to past knowledge. It is more than a quick summary of the ground covered in a lesson. In addition to pulling together the major points and acting as a cognitive link between past knowledge and new knowledge, closure provides the pupil with a needed feeling of achievement. Closure is not limited to the completion of a lesson. It is also needed at specific points within the lesson so that pupils may know where they are and where they are going.

4. RECOGNIZING AND OBTAINING ATTENDING BEHAVIOR

Teachers can be trained to become more sensitive to the classroom behavior of pupils. The successful experienced teacher, through visual cues, quickly notes indications of interest or boredom, comprehension or bewilderment. Facial expressions, directions of the eyes, the tilt of the head, and bodily posture offer commonly recurrent cues which make it possible for the skilled teacher to evaluate his classroom performance according to the pupil's reactions. He can then change his "pace," vary the activity, introduce new instructional strategies as necessary and improve the qulity of his teaching. Unlike his more experienced counterpart, the beginning teacher has difficulty perceiving and interpreting these visual cues through 16mm motion picture films and 35mm still picture protocols of classrooms, and video-tape recordings in micro-teaching sessions, supervisors are able to sensitize teachers to visual cues of pupils' attending and non-attending behavior.

5. PROVIDING FEEDBACK

The feedback process in the training of teachers may be simply stated as providing "knowledge of results". Teachers often ignore the availability of information accessible during the lesson. Questioning, visual cues, informal examination of performance, are immediate sources of feedback. Teachers can be taught appropriate techniques to elicit feedback from students to modify their lesson accordingly. Teachers unconsciously tap a variety of feedback sources but unless they are sensitized, they tend to rely unevenly on a limited number of students as "indicators" and to rely on a restricted range of feedback cues.

6. EMPLOYING REWARDS AND PUNISHMENTS (REINFORCEMENT)

Reinforcing desired pupil behavior through the use of reward and punishment is an integral part of the teacher's role as director of classroom learning. Substantial psychological evidence confirms the value of reinforcement in the learning process. The acquisition of knowledge of specific techniques of reward and punishment and the development of skill in using them appropriately in specific situations is most important in training a beginning teacher. Experience indicates that teachers can acquire skill through micro-teaching practice in reinforcement of pupil learning.

7. CONTROL OF PARTICIPATION

Micro-teaching sessions enable teachers to analyze the kinds of pupil-teacher interaction which characterize their teaching. Control of pupils' participation is one important variable in the successful learning for pupils. Micro-teaching sessions provide an opportunity for teachers to practice different techniques for encouraging or discouraging classroom interaction and to gain insight into the casual relationship between a series of teacher-pupil interactions. When a teacher develops the skill to analyze and to control the use of his accepting and rejecting remarks, his positive and negative reactions, his patterns of reward and punishment, he has taken a major step toward effective teaching.

8. REDUNDANCY AND REPETITION

The purpose of this skill is to clarify and reinforce major ideas, key words principles, and concepts in a lecture or discussion. The use of redundance and repetition is a powerful technique in focusing and highlighting important points, and describing them from a different point of view. Improper use of this skill can cause confusion and poor learning among the students, while proper use can direct their attention to points which the teacher wished to emphasize. There are two main varieties of repetition: (1) literal repetition - using simple, massed, distributed, and accumulative repetition; and (2) Figures of speech-metaphors, analogies, verbal emphasis, focusing, gestures, and visual highlighting.

9. ILLUSTRATING AND USE OF EXAMPLES

The use of examples is basic to teaching for good, sound, clear teaching. Examples are necessary to clarify, verify, or substantiate concepts. Both inductive and deductive uses of examples can be used effectively by the teacher. Effective use of examples includes: (1) starting with simple examples and progressing to more complex ones; (2) starting with examples relevant to students' experience and knowledge; (3) relating the examples of the principles or ideas being taught: (4) checking to see if the objectives of the lesson have been achieved by asking students to give examples which illustrate the main point.

10. ASKING QUESTIONS

Prior to the development of probing and higher order questioning techniques comes the skill of asking questions, period. Too often beginning teachers lecture and tell students rather than asking questions which can elicit the answers from the students themselves. Training techniques have been developed by which teachers can see model video-tapes of teachers demonstrating this skill, and by practicing in a micro-teaching situation increase the number of questions which they ask of students. Having achieved this goal the emphasis can be placed on higher order questioning techniques.

11. THE USE OF HIGHER ORDER QUESTIONS

Higher order questions are defined as questions which cannot be answered from memory or simple sensory description. They call for finding a rule or principles rather than defining one. The critical requirements for a "good" classroom question is that it prompts students to use ideas rather than just remember them. Although some teachers intuitively ask questions of high quality, far too many over-emphasize those that require only the simplest cognitive activity on the part of the students. Procedures have been designed to sensitize beginning teachers to the effects of questioning on their students and which provide practice in forming and using higher order questions.

12. THE USE OF PROBING QUESTIONS

Probing requires that teachers ask questions that require pupils to go beyond superficial "first-answer" questions. This can be done in five ways: (1) asking pupils for more information and/or more meaning; (2) requiring the pupil to rationally justify his response; (3) refocusing the pupil's class attention on a related issue; (4) prompting the pupil or giving him hints; and (5) bringing other students into the discussion by getting them to respond to the first student's answer.

13. TEACHER SILENCE AND NON-VERBAL CUES

Many teachers are frightened by silence or pauses in classroom discussion. They usually hasten to fill silence gaps by talking. What many teachers do not realize is that teacher silence is a powerful tool in the classroom. Teacher pausing can be used after: (1) introductory statements to pressure the students into thinking about the teacher's statement; (2) questions to the students to give them time to think about a proper answer; (3) questions from the students to direct the question to another student with a look or gesture; (4) student response to elicit a continuing response.

14. STUDENT-INITIATED QUESTIONS

This skill is based upon techniques which produce a discrepant event that provokes students to ask questions of the teacher. These questions can be asked in a twenty-question type of game which keeps student motivation and interest at a high level.

15. COMPLETENESS OF COMMUNICATION

Although the importance and need for clear communication is blatant, it is not often the guiding principle in actual communication. Sensitivity training on the importance and the difficulty of being understood is the focus of this skill. Several classroom games have been devised which dramatically demonstrate to teachers that what they consider to be clear instructions are often not clear at all to the students. Sensitivity training in the skill of communicating with others will produce teachers who are more responsive to possible miscommunication.

INTEGRATIVE SKILLS

The following are classified as integrative skills because they consist of combinations of other skills. Mastery of the separate skills is not enough to produce the overall desired behavior. For this reason new skills are listed which consist largely of combinations of other skills in a different context.

16. VARYING THE STIMULUS SITUATION

Psychological experiments have shown that deviations from standard, habitual teacher behavior result in higher pupil attention levels. Teachers would be sensitized to their habit patterns and made aware of attention producing behavior that they, as the stimulus object, can control. The behaviors include teacher movement, gestures, focusing pupil attention, varying the interaction styles, pausing, and shifting sensory channels.

17. LECTURING

Training in some of the successful techniques of lecturing based upon a communications model is the focus for this skill. Delivery techniques, use of audio-visual materials, set induction, pacing, closure, redundancy and repetition, and other skills related to lecturing are included.

18. PRE-CUEING

Pupils are often called on in class to answer questions. Frequently the student does not know the answer and either wastes class time talking in circles, or else admits ignorance. If the teacher could cue the student 5 or 10 minutes ahead of when he wants the answer, the student could prepare himself, thus making a significant contribution to the class. The alerting or cueing of students is a teacher technique which can be used to good purpose in the classroom.

MICHIGAN-OHIO REGIONAL EDUCATIONAL LABORATORY

CLASS REACTION FORMS TO BE USED WITH THE MOREL TEACHING SKILLS

IA	Asking Closed Questions
IB	Asking Open Questions
IC	Asking Probing Questions
ID	Asking Questions to Raise or Lower the Level of Abstraction
IE	Asking Clarifying Questions
IIA	Using Student Ideas
IIB	Praising and Encouraging Students
IIC	Establishing Set
IID	Closure
IIE	Recognizing and Obtaining Attending Behavior
IIF	Encouraging and Controlling Student Participation
IIG	Providing Feedback to Students
IIH	Accepting Student Feeling
III	Providing Reinforcement to Students
IIJ	Explaining and Clarifying Ideas

MOREL
Class Reaction Form

Date_______________, 1969

Code #__________________

Teacher's Questions (A)

Please Mark in Spaces
/ _x_ / not _x_ /

1.	The teacher's questions were_________.	Unclear / Understandable / Very Clear	/ / / / / /
2.	The teacher's questions ____________.	Did Not Help Me Remember / Helped Me Remember	/ / / / / /
3.	The teacher asked questions about _____________.	Largely Unimportant Items in the Subject / The Important Items	/ / / / / /
4.	The teacher's questions____________.	Did Not Make Me Think At All / Forced Me to Think How to Use The Ideas	/ / / / / /
5.	The teacher's questions___________.	Did Not Help Me Review at All / Helped Me Review What We Studied	/ / / / / /
6.	The teacher's questions were related to the subject.	Not at All / Some / Very Much	/ / / / / /

MOREL
Class Reaction Form

Date______________,1969

Code #________________

Please Mark in Spaces
/ x / not _x_

Teacher's Questions (B)

1. The teacher's questions were asked in such a way that I wanted to_________.

Keep Quiet — Talk Some — Talk
/ / / / / /

2. The teacher's questions were asked in such a way that I was encouraged to use my own words to describe the things I was discussing.

Not at All — Some — Much
/ / / / / /

3. The teacher's questions helped us aim the discussion at problems we were trying to solve.

Not at All — Some — Much
/ / / / / /

4. The teacher's questions were________.

Unclear — Understandable — Very Clear
/ / / / / /

5. The teacher's questions helped me think about how the facts related to the problem.

Not at All — Some — Very Much
/ / / / / /

6. The teacher's questions helped me think about which problems are really important

Not at All — Some — Very Much
/ / / / / /

7. The teacher's questions were related to the subject.

Not at All — Some — Very Much
/ / / / / /

8. The teacher's questions helped me think of new ways to solve the problems we agreed upon.

Not at All — Some — Very Much
/ / / / / /

9. The teacher's questions helped me decide whether the things we agreed upon were good or bad.

Not at All — Some — Very Much
/ / / / / /

MOREL
Class Reaction Form

Date________________,1968

Code_____________________

Please Mark in Spaces
/ x / not x /

Teachers Questions (C)

1. The teacher's questions were
Unclear / / Understandable / / Very Clear / /

2. The teacher's questions were _____________to the subject.
Not Related at All / / Related / / Very Much Related / /

3. The teacher asked us to give examples.
Did / / / / / / Didn't

4. The teacher asked us to give evidence (facts.) to support what we were saying.
Did / / / / / / Didn't

5. The teacher rephrased his (her) questions to make them clearer.
Did / / / / / / Didn't

6. The teacher rephrased our statements and questions to make us think more clearly about what they meant.
Did / / / / / / Didn't

7. The teacher's questions showed that he understood how we feel about things.
Did / / / / / / Didn't

8. The teacher listened carefully to us.
Did / / / / / / Didn't

9. The teacher used our ideas to build the discussion and to develop new ideas.
Did / / / / / / Didn't

MOREL
Class Reaction Form

Teacher's Questions (C) Page 2

10. The teacher's questions led the discussion into things most of us were interested in.	Did / / / / / / Didn't
11. It wasn't too hard for us to follow the discussion.	Did / / / / / / Didn't

Date______________, 1969

MOREL
Class Reaction Form

Code ______________

Please Mark in Spaces
/x/ not x_/

Teacher's Questions (D)

1. The teacher's questions helped me see how I needed several examples to prove a point.
Did ___/___/___/___/___/___/___ Didn't

2. The teacher's questions showed how opposite examples can show that an argument is wrong.
Did ___/___/___/___/___/___/___ Didn't

3. The teacher's questions helped me see that logic can build or destroy an argument by the way it explains the example.
Did ___/___/___/___/___/___/___ Didn't

4. The teacher rephrased our statements and questions to make us think more clearly about what they meant.
Did ___/___/___/___/___/___/___ Didn't

5. The teacher's questions were very clear.
No ___/___/___/___/___/___/___ Yes

6. The teacher's questions made me think about how to use ideas.
No ___/___/___/___/___/___/___ Yes

7. The teacher's questions were asked in such a way that I was encouraged to use my own words to describe the things I was doing.
Not At All ___/___/___/___ Some ___/___/___/___ Much

8. The teacher's questions helped me think about how the facts related to the problem.
Not At All ___/___/___/___ Some ___/___/___/___ Much

MOREL
Class Reaction Form

Date __________, 1969

Code __________

Teachers Questions (D) (Cont.)

9.	The teachers questions were related to the subject.	Not At All Some Very Much / / / / / /
10.	The teachers questions helped me think about problems which are really important.	Not At All Some Very Much / / / / / /
11.	The teachers questions helped me think of original ways to solve the problems we had agreed upon.	Not At All Some Very Much / / / / / /
12.	The teachers questions helped me decide whether the things we agreed upon were good or bad.	Not At All Some Very Mcuh / / / / / /

MOREL
Class Reaction Form

Date________________, 1969

Code #_________________

Teacher's Questions (E)

Please Mark in Spaces
/_x_/ not_x_/

1. The teacher helped to clear up our ideas by asking one student what he thought another student's statement meant.

Not at All Some Lots
/ / / / / /

2. The teacher helped clear up an idea by having a student ask another student what the statement he had just made meant.

Not at All Some Lots
/ / / / / /

3. The teacher helped to clear up an idea by asking me to repeat what I had just said.

Not at All Some Lots
/ / / / / /

4. The teacher helped clarify an idea by asking a student to give an example for another student's idea.

Not at All Some Lots
/ / / / / /

5. The teacher helped to clear up an idea by asking a student to explain his thought in more detail.

Not at All Some Lots
/ / / / / /

6. The teacher's questions were_______.

Unclear Understandable Very Clear
/ / / / / /

. The teacher's questions were_________ related to the subject.

Not at All Some Very Much
/ / / / / /

MOREL
Class Reaction Form

Teacher's Questions (E) Cont.

8. The teacher's questions were asked in such a way that I wanted to

Keep Quiet Talk Some Talk a Lot
/ / / / / /

9. The teacher helped me say what I meant by asking me to give examples.

Not at All Some Much
/ / / / / /

MOREL

Class Reaction Form

II A

ease Mark in Spaces

/ x / not x /

During this class, I took part in the discussion.______________.	Not at All — Some — A Great Deal / / / / / /
During this class, the teacher took my idea and restated it____________.	Not at All — A Few Times — Many Times / / / / / /
During this class, the teacher took my idea and made it clearer (by rewording it or asking me questions)__________.	Not at All — Some — Many Times / / / / / /
During this class, the teacher built on my idea.	Not at All — Some — Many Times / / / / / /
During this class, the teacher rejected my idea.___________.	Not at All — Some — Many Times / / / / / /
During this class, the teacher acknowledged my idea by nodding, saying yes or OK, but that was all he did.______________.	Not at All — Some — Many Times / / / / / /
During this class, the teacher said nothing after I stated my idea.______.	Not at All — Some — Many Times / / / / / /

MOREL
Class Reaction Form

II B

Please Mark in Spaces
/ x / not ~~x~~ /

1. During this class, I took part in the discussion.
Not at All Some A Great Dea
/ / / / / /

2. During this class, the teacher praised me by what he said.
Not at All Some Many Times
/ / / / / /

3. During this class, the teacher praised me without saying anything (a smile, a nod, etc.)
Not at All Some Many Times
/ / / / / /

4. During this class, the teacher joked about what I said in a way that made me feel good.
Not at All Some Many Times
/ / / / / /

5. During this class, the teacher encouraged me to say more about my ideas.
Not at All Some Many Times
/ / / / / /

6. During this class, the teacher made me feel good about my ideas by using them again in the discussion.
Not at All Some Many Times
/ / / / / /

MOREL
Class Reaction Form

II C

Please Mark in Spaces
/ x / not x /

1. The teacher told us what the purpose(s) of the lesson were

Did Didn't
/ / / / / /

2. The teacher showed us how the new material was related to things we already know.

Did Didn't
/ / / / / /

3. The teacher showed us how the new material was related to our experiences.

Did Didn't
/ / / / / /

4. The teacher got me interested enough to want to take part.

Did Didn't
/ / / / / /

COMMENTS ______________________________

MOREL
Class Reaction Form

II D

Please Mark in Spaces
/x/ not x_/

1. During this class the teacher summed up the lesson and showed how it was related to things we already knew.

Did ____/____/____/____/____/____/____ Didn't

2. The teacher's summary of the lesson helped me understand what we were learning.

Did ____/____/____/____/____/____/____ Didn't

MOREL
Class Reaction Form

II E

Please Mark in Space
/ x / not ~~x~~ /

1. The teacher _______ tell when I was or wasn't interested in what was going on, without asking me.
   Could Tell ___/___/___/___/___/___/___ Couldn't Tell

2. The teacher _______ tell when I was puzzled, didn't understand or needed help.
   Could Tell ___/___/___/___/___/___/___ Couldn't Tell

3. The teacher _______ get me interested when he knew I wasn't
   Could ___/___/___/___/___/___/___ Couldn't

4. The teacher _______ help me when he knew I needed it.
   Could ___/___/___/___/___/___/___ Couldn't

Comments____

MOREL
Class Reaction Form

II F

Please Mark in Spaces
/x/ not x_/

1. The teacher did things to get me involved in the class activities.
Did / / / / / / Didn't

2. The teacher helped me keep what I was doing related to the goals of the class activity.
Did / / / / / / Didn't

3. It wouldn't have mattered what the teacher did, I would have taken part anyway.
Would / / / / / / Would Not

Comments ____________________

MOREL
Class Reaction Form

II G

Please Mark in Spaces
/x/ not ✗_/

1. The teacher showed us how our class was making progress toward the goals of the lesson.
Did __/__/__/__/__/__/__ Didn't

2. The teacher helped us feel good about our progress.
Did __/__/__/__/__/__/__ Didn't

3. The teacher showed me how I was making progress toward the goals of the lesson.
Did __/__/__/__/__/__/__ Didn't

4. The teacher helped me feel good (better) about my progress.
Did __/__/__/__/__/__/__ Didn't

5. The way the teacher criticized or praised made a difference in the way I felt about my progress.
Did __/__/__/__/__/__/__ Didn't

Comments ____

MOREL
Class Reaction Form

II H

Please Mark in Spaces
/_x_/ not _x_/

1. During this class, I took part in the discussion.	Not at All	Some	A Great Deal
	/ /	/ /	/ /
2. During this class, the teacher paid attention to my feelings.	Not at All	Some	A Great Deal
	/ /	/ /	/ /
3. During this class, the teacher showed that he understood and accepted my feelings by what he said.	Not at All	Some	A Great Deal
	/ /	/ /	/ /
4. During this class, the teacher showed that he understood and accepted my feelings without saying anything.	Not at All	Some	A Great Deal
	/ /	/ /	/ /

Comments

MOREL
Class Reaction Form

II I

Please Mark in Spaces
/ x / not x /

	Not at All	Some	A Great Deal
1. I took part in the discussion	/ /	/ /	/ /
	Did		Didn't
2. The teacher made me feel rewarded by the way he spoke about the work I did and the things I said.	/ /	/ /	/ /
	Did		Didn't
3. The teacher made me feel rewarded by the way he reacted to the work I did and the things I said without saying anything.	/ /	/ /	/ /
	Did		Didn't
4. The teacher made me feel rewarded by the grades he gave me for the day.	/ /	/ /	/ /

Comments

MOREL
Class Reaction Form

II J

Please Mark in Spaces
/ x / not x /

1. During this class, the teacher explained and/or made an idea clearer for me.

Not at All Some A Great Deal
/ / / / / /

2. During this class, the teacher showed me how a new idea was related to another idea brought up earlier by a student.

Not at All Some A Great Deal
/ / / / / /

3. During this class, the teacher showed me how a new idea was related to another idea which he brought up earlier.

Not at All Some A Great Deal
/ / / / / /

4. During this class, the teacher asked questions that helped me explain my ideas better.

Not at All Some A Great Deal
/ / / / / /

SCALE AVERAGE	QUESTIONS											
	1	2	3	4	5	6	7	8	9	10	11	12
7.0												
6.9												
6.8												
6.7												
6.6												
6.5												
6.4												
6.3												
6.2												
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1.0												

MICHIGAN-OHIO
REGIONAL EDUCATIONAL LABORATORY

MOREL INSERVICE TEACHER EDUCATION PROGRAM

Subscripting Coding To Be Used With Teaching Skills

Accepting Student Feeling

Flanders Category 1

11	Ignoring Expressed Student Feeling
12	Verbally Accept Student Feeling
13	Non-Verbally Accept Student Feeling
14	Limited Acceptance of Student Feeling
22	Praise and Encourage
33	Use Student Ideas
44	Questions
55	Lecture
66	Directions
77	Criticism
88	Limited Student Response
99	*Unlimited (Student Initiated) Response

* Student Response can be sub-scripted - See using student ideas

Using Student Ideas

Flanders Category 3

11	Accepts Feeling
22	Praise and Encouragement
31	Building and Developing the Student's Ideas
32	Rejection of Student's Ideas (Verbal)
33	No Comment After Student Verbalized an Idea
34	Limited Use of Student Ideas (simple repetition yes, OK, nodding head, etc.)
41	Facts
42	Other Than Facts
55	Lecture
66	Give Direction
77	Criticism
88	Limited Student Response
91	Personal Experience, Opinion, Example
92	Student Question
93	Irrelevant Answer

Praise and Encouragement

Flanders Category 2

11	Accepts Student Feeling
21	Humor
22	Verbal Praise
23	Non Verbal Praise (nodding of head, smiling)
24	Encouragement (go on, fine, yes?, tell me more)
25	Extended use of any one phrase from Category 24
33	Accepts Student Ideas
44	Questions
55	Lecture
66	Give Direction
77	Criticism
88	Limited Student Response
91	Personal Experience, Opinion, Example
92	Student Question
93	Irrelevant Answer

Questioning

Flanders Category 4

11	Accept Student Feeling	
22	Praise and Eccourage	
33	Use Student Ideas	
41	Closed (Facts)	
42	Open	Raise level of abstraction
43		Lower level of abstraction
44	Define or clarify statements or terms --	
55	Lecture	
66	Directions	
77	Criticism	
88	Limited Student Response	
91	Personal experience, opinion, example	
92	Student Questions	
93	Irrelevant Answer	

Flanders Categories 1, 2, 3,

Reinforcement

11	Ignoring Student Feeling
12	Accepting Student Feeling
21	Verbal Praise (fine, that's good)
22	Verbal Encouragement (continue, good, yes? Tell me more etc)
31	Rejection of Student Ideas
32	Non-Verbal Rejection of Student Ideas
33	Building and Developing Student Ideas
44	Questions
55	Lecture
66	Give Directions
77	Criticism
88	Limited Student Response
91	Personal Experience, Opinion, Example
92	Student Question
93	Irrelevant Answer

Establishing Set

Flanders Category 5

11	Accepts Feelings
22	Praise and Encourage
33	Use Student Ideas
41	Open Questions
42	Closed Questions
51	States Goals of Lesson
52	States Behavioral Outcomes Expected by Students
53	Introduces New Material by Relating it to Previous Knowledge
54	States Time Sequence of Activities
55	Introduces New Material by Relating it to Past Experiences of Students
56	Lecture
66	Give Directions
77	Criticism
88	Limited Student Response
99	Unlimited Student Response

Recognizing and Obtaining Attending Behavior

Flanders Category 5, 6, 7

11	Accept Feeling
22	Praise and Encourage
33	Use Student Ideas
44	Questioning
51	Explain or Clarify Ideas
52	Relate New Ideas to Past Knowledge
55	Lecture
61	Explain Directions
62	Provide Alternatives
66	Give Directions (Gen'l)
71	Verbally Notes Non-Attending Behavior
72	Justifies Teacher Authority
88	Limited Student Response
99	Unlimited Student Response

Closure

Flanders Category 5

11	Accept Feelings
22	Praise and Encourage
33	Use Student Ideas
41	Open Questions
42	Closed Questions
51	Hastily Sums up Lesson
52	Sums up Lesson by Relating New Material to Previous Knowledge
53	Has Student Sum Up Lesson
55	Lecture
66	Give Directions
77	Criticism
88	Limited Student Response
99	Unlimited Student Response

Explaining and Clarifying Ideas

Flanders Category 5

11	Accept Feelings
22	Praise and Encourage
33	Use Student Ideas
44	Questions
51	Explain or Clarify an Idea
52	Relate New Idea to Former Student Idea
53	Relate New Idea to Previous Teacher Ideas
55	Lecture
66	Give Directions
77	Criticism
88	Limited Student Response
99	Unlimited Student Response

Providing Feedback to Students

Flanders Categories 5, 7

11	Accepts Feeling
22	Praise and Encourage
33	Use Student Ideas
44	Questions
51	Positively Relates Class Performance to Stated Goals
52	Relates Individual Performance to Stated Goals
55	Lecture
66	Give Directions
71	Negatively Relates Class Performance to Stated Goals
72	Negatively Relates Individual Performance to Stated Goals
77	Criticism
88	Limited Student Response
99	Unlimited Student Response

Explaining and Clarifying Ideas

Flanders Category 5

11	Accept Feeling
22	Praise and Encourage
33	Use Student Ideas
44	Questions
51	Explain or Clarify Ideas
52	Related New Idea to Former Student Idea
53	Related New Idea to Previous Teacher Ideas
55	Lecture
66	Give Directions
77	Criticism
88	Limited Student Response
99	Unlimited Student Response

Student Participation (Quality)

Flanders Category 9

Directions:

Build three digit coding scheme using 9 as first digit and student i.d. number as second and third digits, i.e. 901, 902, 911, etc. The student i.d. numbers are given out and recorded on a seating chart which the coder must be familiar with before attempting to code the class.

Example:

Teacher Talk:	333	Using Student Ideas
	444	Questions
	555	Lecture
Student Talk	901	Student One - Mary Jones
	902	Student Two - Billy Smith
	etc.	

Student Participation (Quality)

Flanders Categories 3, 9

11	Accepts Feelings
22	Praise and Encourage
31	Building and Developing Student Ideas
32	Limited Use of Student Ideas
33	No Comment After Student Ideas
41	Open Question
42	Closed Question
55	Lecture
66	Give Directions
77	Criticism
88	Limited Student Response
91	Personal Experience, Opinion, Example
92	Relevant - Question
93	Irrelevant Question
94	Irrelevant Answer

Mediator of Research
Research Findings

Educational development is basically the procedure of translating the results of research into useful programs for implementation in an appropriate educational setting. The summary statements below are intended to be representative of findings from research on the improvement of teaching effectiveness. Study of these statements will provide an understanding of the selection of techniques and procedures employed in the program MOREL has developed. Most of the statements are not direct quotes but are appropriate paraphrases of the research results. In either case the name or names following indicates the source of the statement.

Research Summary Statements

1. Teacher behavior patterns are stable over time. (Hughes, Medley, Mitzel
2. The behavior of a teacher influences the emotional climate of the classroom. Different teachers produce a different climate with the same children. (Withall)
3. The expectations of a teacher influences the performance of students. (Rosenthal).
4. The emotional climate in a classroom relates to the pupil-teacher rapport. (Morrison)
5. Change in behavior if more likely if a person perceives a difference between what he is accomplishing and what he thinks he is accomplishing. (cognitive - dissonance - Festinger)
6. When educators look at actual instructional operations, they find them quite different than what they thought them to be. (Smith & Meux)
7. Studies of the relationships between teacher characteristics and pupil growth have produced meager results. (Flanders)
8. Five characteristics which seem to be components of effective teaching are: (1) warmth; (2) cognitive organization; (3) orderliness; (4) indirectness; (5) problem solving ability. (Gage)
9. Only a slight positive correlation exists between scholarship and effective teaching. (Fattu and Howsam)
10. Interactive aspects of teaching are more useful (for study) than, for example, teachers' use of printed materials, filmstrip projectors, etc.
11. Attempts to build a theory of teaching from statistical descriptions of what happens have failed to prescribe what should be happening. (Anderson).
12. Much of the activity in secondary classrooms is verbal. (Flanders)
13. The most direct method of studying teaching is by collecting observational data. (Biddle, Soar, Flanders, Mitzel, Medley)
14. Much research has verified the reliability of observational systems. (Flanders, Withall, Mitzel, Medley and others)
15. Persons can be trained easily to reliably use observational techniques.
16. Category systems, which classify all behaviors, seem more useful than sign systems, which classify segments or aspects of behavior. (Mitzel, Medley)
17. Observational data is more useful if observer and teacher both understand the purposes of the data collection and agree to the use of the data. (MOREL and others)

18. Research on teaching effectiveness can be improved if there is agreement on the outcomes of the educational effort. (Biddle & Soar)
19. The resemblance between a classroom without an observer and one with an observer is closer than the laboratory situation and the real life classroom. (Mitzel and Medley)
20. Self assessment ratings tend to be biased toward overrating. (Howsam)
21. Peer ratings are based on marginal evidence. (Howsam)
22. Supervisory or administrative ratings do not correlate with those of others. (Howsam)
23. Simulated conditions or role playing provides an opportunity to experiment with the realities of teaching in a non-threatening situation. (MOREL, Allen, Flanders, others)
24. The percent of teacher statements that make use of ideas and opinion previously expressed by pupils is directly related to average class scores on attitude scales of teacher attractiveness, liking the class as well as average achievement adjusted for initial ability. (Flanders)
25. More effective teachers make more use of student ideas than less effective teachers. (Pankcratz)
26. Teachers use of student ideas created less student dependence on teachers. (Filson)
27. Responsive teachers have more positive attitudes among pupils and higher levels of student thinking. (Miller, Hughes)
28. Students exposed to teachers who make more use of their ideas and opinions not only had more positive attitudes, but were also more likely to ask thought provoking questions during class discussion. (Johns)
29. Significant positive correlations existed between use of praise and pupil interest in science. (Reed)
30. The level of thinking of students is related to the level of thinking of the teacher. (Aschmer, Gallagher)
31. Less effective teachers are more alike and less flexible and probably easier to identify then effective teachers. (Flanders)
32. Teachers who receive such training on how to analyze verbal classroom behavior seem to make more changes in their teaching than those who do not receive such training (Flanders, Amidon, Hough)
33. Interaction analysis training helps to increase the use of indirect teaching. (Ober, Kirk)
34. Through focusing on classroom experimental behavior, teachers can learn to become more indirect. (Flanders)
35. Indirect teaching helped teachers to foster a greater sense of independence, a more equal balance between attitudes toward teaching and ideas about teaching. (Flanders)
36. Teacher impact on student thinking depends on such things as questions asked, data given to pupils, what the teacher seeks from students, what ideas are elaborated and which ideas are passed over. (Taba)
37. A slight increase in percentage of divergent questions asked by teachers brought about a large increase in divergent production of pupils. (Gallagher, Oschner)

38. Learning was greatest, in a junior high study, where teachers were more indirect but who were flexible in that they were able to use direct teaching appropriately. (Flanders supported independently by La Shier)
39. Certain teacher behaviors - lecturing, criticizing - were found to be associated with loss of achievement. (Perkins)
40. Teachers who learned techniques for analyzing their teaching behavior had a positive change in attitudes as measured by the Minnesota Teacher Attitude Inventory. (Bowen)
41. Intense behavioral training with frequent and immediate feedback in combination with attention to instructional theory have produced statistical significant results in a constructive manner on subsequent teaching behavior. (Allen)
42. Learning is more likely to occur if feedback is immediate. (Skinner)
43. Micro-Teaching calls for realistic setting of goals. (Meier)
44. The micro-teaching framework provides opportunity to consider individual differences. (Meier)
45. Active participation by the trainee in the skill he is attempting to develop is preferred. (Meier)
46. Transfer is more likely if learner sees the transfer relationship for himself. (Meier)
47. Teachers who practice behaviors related to controlling student participation change their behavior greatly. (Allen)
48. By sensitizing teachers to their habitual patterns of reinforcement, they can broaden their reinforcement patterns. (Allen)
49. An abstract and/or artificial training situation or requirement relates to teacher change in the classroom. (Allen)
50. Skill training through micro-teaching persists over time. (Allen)
51. Teaching behavior is habitual to the extent that behavior in a micro-teach is related to behavior in a full classroom. (MOREL)
52. Teachers who received monthly feedback from students moved closer to ideal teacher than those who received no student feedback. (Gage)
53. Pupil ratings seem to be favorable and consistent. (Howsam)
54. Students, even at the elementary level can give reliable information about how their teacher teaches. (Medley, Klein)
55. Student feedback alone may not be enough to change behavior - direct skill training following feedback may be needed for change. (Ryan)
56. Students need some sort of rating scale on which to place their teachers rather an open ended response. (Ryan)
57. Student feedback may isolate the need for skill development and create the necessary dissonance for training to take place. (Ryan)
58. Informational feedback from students is effective in changing teaching behavior. (Oliver)
59. Student feedback is more effective in changing teaching behavior than supervisory feedback. (Oliver)

Mediator of Research
Sources of Data

The following is a short bibliography of research on improving teaching effectiveness. This listing is not intended to be exhaustive, but is to familiarize the reader with the names and works of some of the researchers in teaching behavior. For the reader who desires as much data as possible in one source, The Handbook of Research on Teaching edited by N.L. Gage, is strongly recommended.

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Mediator of Research
Utilization of Research Findings

In educational circles, one often hears the question, is there any research which applies to this or that problem? In most cases, the answer to that question is yes. The major task, however, is designing an improvement program which utilizes the research findings in solving educational problems. As a modest beginning toward utilization of research findings, read the simulated situations below and answer the questions asked. Each will be discussed by the group.

I

A. You, as an in-service leader in your secondary school, have been assigned the task of working with a group of teachers to help them improve their verbal teaching effectiveness. The teachers are volunteers, or at least semi-volunteers, but are showing some resistance to working in such a program. You hear such statements as, "much of my teaching is not verbal." "How can I improve my verbal teaching effectiveness?" "How does he propose to know what we do?" Through discussion you discover that some of this resistance might decline if the teachers have some evidence to support such a program.

B. Questions

1. Assuming that research findings would be helpful, what findings would you share with these teachers?

2. How do you think you might share them?

C. Discussion

II

A. You are working with an eleventh grade teacher who relies heavily on lecturing as his mode of instruction. He is fairly well convinced that the lecture approach is the most effective for him and his subect matter. You do not wish to make a judgement, but you do feel that he might profit from a variation in teaching strategies. Conversation with him leads you to believe that he would be willing to change if he had some evidence of success with other approaches.

B. Questions

1. What research findings would you find useful for discussion with him?

2. What guidelines would you attempt to follow in helping him design alternative teaching approaches?

C. Discussion

III

A. Miss Miller is not satisfied with the production of her seventh grade language arts class. She approaches you, as an instructional leader, with a statement of her dissatisfaction. Through conversation with her you learn that she is mainly dissatisfied with the class discussions. You get the feeling that she believes in the value of class discussion, but she is not very sure about effective procedures she could use. You accept as your task to: (1) help her see the full value of class discussions and (2) help her design simple teaching experiments related to improving classroom discussion.

B. Questions

1. What research findings would you utilize in working on this problem?

2. What are one or two simple teaching experiments you would help her design?

C. Discussion

IV

A. As an in-service leader you are working with two teachers who have just completed a beginning statistics course and are anxious to apply their new-found knowledge to their teaching. These teachers feel that by measuring student achievement and doing statistical workups, they can isolate the learning problems students are having and be able to improve the level of learning. You wish to build on their enthusiasm and therefore must work carefully.

B. Questions

1. What research would you find helpful in approaching this problem?

2. Is there a way you could utilize the new learning of these teachers in classroom experimentation?

C. Discussion

V

A. You are working with a group of teachers part of whom believe that classroom observation by an educational generalist is not particularly productive. Part of the problem might stem from their experience with evaluations from administrative and supervisory personnel. The problem might also relate to the teachers' concern. With content and their belief that instructional assistance must come from educational specialists, your task is to gain their support for conducting classroom observation. You believe some research findings will support your cause.

B. Questions

1. What research would you draw upon to attack this problem?

2. How would you use that research data?

C. Discussion

VI

A. Mr. Baxter, eighthgrade science teacher, is concerned about the level of thinking shown by his students. You manage an invitation into his class for the purpose of observation on the hope you can gather data about the problem he expressed. You observe a teaching pattern as follows: (1) teacher asks factual questions about the assignment made the previous day; (2) teacher introduces new material by explaining the scientific concept to the students; (3) teacher demonstrates the concept with an experiment at the front of the room; (4) teacher asks direct questions about the experiment; (5) teacher makes the assignment for the next day.

B. Questions

1. What research findings would you utilize to help solve his problem?

2. What are one or two simple teaching experiments you would help Mr. Baxter conduct?

3. How might you evaluate such experiments?

C. Discussion

VII

A. You are working with a group of teachers who believe that more accurate knowledge about instructional procedures which they use will help them improve their teaching.

B. Questions

1. What research findings would you draw upon to build such a program?

2. Would you use different techniques for the group than for individuals?

3. If you wished to start simply, what techniques would you consider?

C. Discussion